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Freud in Classic Bronze—Marian Marvin, *Sculptor*

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Left—19 Berggasse, Wien.

Below—The House in Berchtesgaden where was written "The Interpretation of Dreams."

FREUD---THE MAN

(Born in Freiberg, Moravia, May 6, 1856. Died September 23, 1939, in London, England)

BY CLINTON P. MC CORD, M. D.

"Truth is within ourselves; it takes no rise
From outward things, whate'er you may believe;
. . . . . and to KNOW
Rather consists in opening out a way
Whence the imprisoned splendor may escape,
Than in effecting entry for a light
Supposed to be without."

When a truly great man dies the light of his genius is not extinguished; in fact, it grows brighter with each passing century, because the years brush from the scene the distorted feelings of contemporaries that obscure when attempts are made to delineate his attributes or to evaluate his achievements. Therefore, it might be well, in addressing a group of psychiatrists, many of whom are not analysts, to avoid at this time any consideration of the system of psychology that Freud developed and to offer no description of the nature and the therapeutic application of his formulations. No discovery can ever be greater than the mind that conceived it and revealed it to other minds. If we know a really great scientist, we shall find him a great man in terms of qualities not limited to the expression of himself through his profession. In such a tribute, addressed, perhaps, to the most highly trained group of scientists in America, it would seem that they should hear something about Freud as a *human being,* a *man,* rather than to have catalogued for them the major moves in his life as a writer and psychoanalyst. I shall not attempt to convince, but only to record a few items that come spontaneously out of a wealth of memories and experiences from personal contact or correspondence, elaborated through recollection and incorporation into my own long experience as a psychotherapist. What the psychiatrists who read these lines obtain from them will be determined by what they bring to the consideration of a human character that they probably know only as a symbol, a theory or a technique. I shall limit what I say to things that might be

true of him were he a great architect, explorer or poet, or a great chemist, which in truth he was—a "chemist of the psyche," as Ferenczi liked to describe an analyst. In a glimpse of a man from an individual viewpoint much conversation of a personal nature is excluded, since the great figure is no longer here to reply for himself; otherwise, such an appraisal might admit of several interpretations, concerning the writer rather than the one about whom he writes. Further we must not forget that analysis is an *emotional experience,* not an intellectually comprehensible course of study. Always has it been true, that the nearer one got to Vienna, the fountain-head of psychoanalysis, the less one found of academic rigidity—less form, more substance. The deeper spirit of analysis moved in more flowing garments best in Old Vienna. The new surgeon must adhere rigidly to the technique of his teachers; the novice cannot depart from the academic rules; whereas the experienced operator varies his technique and develops his own departures in emergency. With the master all things are simple, plain. Freud in his personal reactions revealed the same simplicity and clarity that characterized his writings; but no one ever grasped the deeper meanings of analysis by reading about it. No one person will ever write a true biography of Freud. No ordinary person nor group of persons can completely evaluate even a portion of so extraordinary a personality. His activities, as they concerned the outside world, can be appraised in small degree through his writings and professional relationships. But we know that this record is the least accurate measure of his character, compared with his personal attributes. His personality, as a whole, becomes meaningful only to the degree that the student is free, emotionally, to appreciate the truth that insight and conviction have made *his* truth.

Freud was a diligent researcher, a keen observer with quick intuition, a natural therapist, a captivating and lucid writer. Yet he was something far more inclusive and powerful—he was a great *man* with power to give and receive love at the adult level. He possessed a nice balance of the myriad attributes contributory to the character that adjusts to a wide range of demands with resourcefulness and courage beyond the limits of most of mankind. His whole life saw him possessed of these qualities, but it was not given to many to really know the man. Most people were too busy,

trying to learn something about the scientist, the psychologist, the analyst, to discover the man. If more psychiatrists had known this man personally, more would have accepted the truth that resides in his system of psychology.

When the editor of this journal suggested that I prepare a tribute to Professor Freud, I recalled a conversation in Vienna some years ago, following an hour Hutchings (who had been amongst the earliest members of the profession to open his mind to the formulations) had spent with Freud. At that time Freud, after speaking appreciatively of the valuable service Hutchings had rendered to the cause in America, closed his characterization of our respected colleague with these words: "And, he is a kind gentleman." And, I shall here limit my remarks to terms that refer directly to things that appear as strong and lovable qualities in Freud as a man. Since it would be presumptuous for any one person to offer even a summary of him as a man, I wish to set down only a few paragraphs, representing certain typical memories of him. The many interesting, remarkable and inspiring things of a personal nature that anyone who had more than passing contact with him could treasure, and the wisdom of which one could for years ponder upon and apply in a thousand situations, cannot be imparted to any group in a single communication. His was a many-sided personality, and what he said or did in his varied contacts over the years in differing degrees of relationship, would require that his biographers, if they ever appear, be legion, if all the richness of his character were to be indicated. Each person who knew him well, of course, knew him from a different angle and received from him just what he was equipped to receive. Always infinitely kind and considerate to anyone who deserved such gifts, his family life was, of course, of a richness and completeness seldom observed. I have seen him, surrounded by children of all ages, at play, and his attitudes always drew from them reactions of confidence and joyous comradeship.

When Freud visited Clark University the writer was working in the Vineland Laboratory for Psychological Research, and was much interested in the significance of this visit, although he did not at that time meet Freud. Shortly afterward I began reading slowly from one or two of his works to which I had access. During the

27 years that followed, I discarded hypnotism and suggestion in my treatment program with private patients, and gradually extended the application of Freudian analysis, as the most productive therapeutic instrument. From that time on, including the period of personal contact in Vienna, there was never a single ambivalent statement that I ever heard or read, that was not clarified through direct experience with my patients or through the truth as revealed in Freud's capacity as a teacher, his appearance as father and husband in his family circle, and as a wise and kind friend who never failed anyone who deserved his friendly offices.

In the face of certain attitudes on the part of general psychiatry, still persisting, the following seems a challenge: A friend and respected associate, an eminent American professor of psychiatry, once said to me in Budapest, near the close of his analysis with Ferenczi—"You should know that I am reading 'The Interpretation of Dreams' for the fourteenth time and am discovering new truth that, of course, was there when I read it earlier, but which only now am I able to grasp." Almost any analyst has listened to negative statements made with a tone of finality, by colleagues who have read but *once* a *portion* of a volume, or, whose reading has not been done chronologically. There was never an ambivalent assertion by any one who, because of incomplete discharge of conflict, was cloaked with resistance, which would not eventually have been dispelled in the light of first-hand insight into this man's objectives, his character, his behavior. The rigidity, the negativism, the fear, the mixture of hate and love, the attraction and its counterpart, would have been traced to their real roots, and these roots would not have been found in Freud. No one was so tolerant of the work of others; no one rejoiced so freely over another's accomplishment; no one so quickly and generously gave credit where credit was due, as did this many-sided man. More recently, in the center of an almost world-wide psychosis of varying degree and stage of development, Freud remained unafraid and with no illusions. Over the years he had seen too many "dictators" on the analytic couch to be blind to the nature and significance of the aggressions now released throughout the world at such infantile levels.

FREUD—THE SEER
As He Looked at Seventy-three Years of Age

I have seen Freud after he had endured a two-hour attack by an aggressive and formidable individual who was intent upon selfishly destroying the new-found independence of a patient who, through analysis was achieving her freedom. He turned away from the assault with a smile to pat the head of his devoted dog and to tell him in primitive language his appreciation of an affection which, unlike the display from the human animal, contained no hatred, no fear, no misunderstanding, no resistance. And I have seen him, with misty eyes, contemplate regretfully the lifeless and broken body of this same canine friend, overtaken by disaster while making futile efforts to find the way home to his master's side.

The accompanying photograph, Freud—The Seer, here published for the first time, recalls a weekend when Ferenczi was visiting Freud at Schnee Winkel, the estate near Berchtesgaden, where the family passed the summer of 1929. We had been walking, smoking and talking through a delightful afternoon, full of good things and friendly assurances. The writer was leaving just as the sun was sinking beyond the encircling peaks of the Bavarian Alps. With Ferenczi standing beside me, I took the picture, Freud shading his eyes from the slanting rays of the sun. As I made preparation to do this, I said to Ferenczi: "He looks like a seer, peering into the future. For many years he has gazed into the East, and now he is prepared to look into the West. I wonder what he sees as he looks into the future, and what will he say to me as I depart." And Ferenczi replied in a low voice: "He *is* a seer and he *does* look into the future. What he will say to you as you go will cheer you on your way." And then, as he took my hand in parting for the night, Ferenczi having moved to his side, Freud's words came: "And now, goodbye—*until tomorrow.*"

When I left Freud for the last time, he said: "We shall never meet again in person. This handclasp will stay with you; one cannot give it so truly on paper." My reply was: "You have at least ten more years of work before you, and I shall see you several times over that period." To which he replied: "My brother lived beyond eighty—perhaps—who knows?" Almost ten years from that day I was contemplating his photograph on my desk, at a time when he sat in the new-found London home, completing his last published work.

Since his death we have had the many special articles and numerous editorials which, as might be expected, with some exceptions, are perhaps unconsciously tinged with the remnants of ambivalent feeling. How tolerantly he would view such material, if he could read it now! An American analyst once repeated to him a conversation with a renowned dissenter in which the dissenter had given voice to a bitter and belittling remark. Freud's only comment was a smile and the question—"Is he still such a distinguished looking fellow? I have not seen him for sixteen years."

The following lines, author unknown and my memory uncertain as to the exact phrasing, were enclosed in a letter to Freud when the threat to his liberty had begun to close in upon him in Vienna. They may never have reached him, but we know that as he left Old Vienna behind with all its early discouragements, its treasured memories and final victories, he met life with the same gallant power of adjustment that is suggested by the beauty and strength of those lines. They may well carry a message to the brilliant daughter, Anna Freud, also in exile, who is so well equipped to keep burning the fires that he kindled in truth and wisdom over the long years of his productive life. Without being accused of mysticism, this author would thus close this limited personal tribute to the memory of our great teacher:

And when the sun goes down
I have the silver moon;
When that sinks low
I have the shining stars;
And when they fade,
I have my evening lamp, with mellow glow;
And if, perchance, my lamp should fail,
I have my candle, bright;
If that is guttered low and dies,
I still may have my couch
On which to rest and dream—
Till it is light again.

54 Willett St.,
Albany, N. Y.

SEXUAL MANIFESTATIONS IN NEUROTIC AND PSYCHOTIC SYMPTOMS*

BY A. A. BRILL, PH.B., M. D.

Freud began his career as a research student in neurology. After doing pioneer work in this field, he went from the organic to the functional phase of nervous and mental diseases, and gradually developed his psychoanalytic system for the study and treatment of mental processes. As is well shown in his works, he never urged a complete separation of the organic and the psychic.

From Charcot he learned that one can disregard the tangible organic in evaluating morbid processes, that hysterical symptoms can be removed and produced by hypnosis; from Breuer he learned that symptoms can be traced and removed by questioning the patient in a state of hypnosis. But very soon after he began to collaborate with Breuer he gave up hypnotism and the cathartic method and developed the free association method. It was in 1898 that he began to stress the sexual factors in the production of neurotic symptoms, and their important role in normal life.[1] Contrary to the belief of some, he never ignored the physical element in the neuroses. Thus, in formulating the new concept of anxiety neurosis, he stressed the fact that somatosexual injuries were as important in the causation of this neurosis as were psychic factors. And when he finally formulated his concept of the neuroses, he designated the anxiety manifestations as actual neuroses in contradistinction to the psychoneuroses, in which no tangible organic bases could be found.[2]

Throughout his works from 1893 until 1920 he strove to clarify the sexual instincts. For like many other investigators he soon found that the popular term, *sex,* failed to express all the implications underlying these instincts, and, therefore, he first attempted to broaden it by equating sex with the term, *love,* and finally by substituting for it the term, *libido.* This term had been used before by other sexologists, notably Havelock Ellis, and Naecke, but not in the broad and determined sense of Freud's formulation. According to Freud, libido is the motive power of the sexual life. It is the quantitative energy of those instincts which manifest them-

*Read by title before the American Psychopathological Association, Atlantic City, June 6, 1939.

selves in the phenomena of love; directly in that form which leads to sexual union, indirectly in self-love, love for parents and children, friendship, philanthropy in general, as well as in devotion to concrete objects and abstract ideas. Consciously expressed, it is a sexual craving, as James J. Putnam has aptly defined it. As it manifests itself in active, aggressive form, Freud prefers to call it "masculine" although it is as much in the service of the female as in the male sexual function, and despite the fact that it sometimes follows passive aims.[3]

Bearing in mind this broadened and unified concept of libido, one can readily follow the various excursions of the sexual behavior in the so-called normal person, the neurotic, and the pervert.

Briefly, the ego is the source of all libido, and in the autoerotic period of childhood one can speak only of an *ego libido.* The child is purely egotistic in all his behavior. Later, at the age of about four to five years, the libido assumes an erotic coloring, and one then speaks of *narcistic libido.* Hitherto, the infantile sexuality was disseminated and objectless, the child could obtain gratification from various parts of the body (erogenous zones), through all the partial impulses and components of sex. But as the goal of normal life is to attain genitality and find a love object, the various sexual components gradually become, as it were, canalized, to the genital spheres for the purpose of procreation. This process begins, one may say, at birth and attains maturity at the age of puberty. Narcism is thus the principal milepost between childhood and adult life. It is here that the sexual instincts are collected into one stream on their path to object libido, and the first object upon which this stream focusses is the individual himself. It is, as can be seen, a homosexual situation from which the individual gradually departs when the stream later becomes directed to heterosexuality. For contrary to popular opinion, Freud holds that the human sexual life flowers richly up to the age of about five, and is then followed by what he calls a *latency* period during which the hitherto sexual activity vanishes and if anything, undergoes some retrogression.* In other words, the latency period divides the human sexual life into two parts—the infantile sexuality, which flourishes until about the age of five, and the genital sexuality, which is

*For an anatomical confirmation of this theory, *cf.*: "Three Contributions to the Theory of Sex," p. 583, *The Basic Writings of Sigmund Freud.* The Modern Library, 1938.

established through the process of puberty. The latency period thus represents a postponement or a temporary arrest of the sexual activity of man. It is during this period that the psychic forces develop in the form of reaction formations or dams, which inhibit the sexual life and give it, as it were, human or civilized form. For no child is actually born with a sense of sympathy, shame, disgust, or morality. These must be developed through repression and sublimation, which first show themselves in the latency period. Barring untoward event, the average individual goes through this sexual evolution and then functions normally.

If through some accidental trauma, some component or partial impulse fails to follow the normal course, a *locus minoris resistentiae* or *fixation* results, to which libido is later attracted in undue amount, and we may then have a perversion such as sadism, masochism, exhibitionism, et cetera, or a neurosis.

By virtue of a special constitution, the neurotic individual develops neurotic symptoms instead of a perversion if he happens to be subjected to some severe emotional experience. The *neurosis,* according to Freud, *is the negative phase of the perversion.* I regret that I cannot go any further in the exposition of Freud's theories of sex. As a matter of fact, I feel apologetic for having proceeded as far as I have without giving you anything that you have not already read in Freud's original contributions. The only thing that remains for me is to illustrate Freud's theories with clinical material, and I have, therefore, selected some neurotic states, which have their origin in narcistic fixations.

Long ago in 1913, I published a paper on homosexuality,[4] which was supplemented later by two further papers.[5] In that entitled *Homoerotism and Paranoia,* read before the American Psychiatric Association, I said: "Homosexuality is a normal component of the sexual instinct, which in sublimated form plays a useful part in our social relationships. But if through faulty evolution it becomes accentuated, the resulting dysfunction invariably shows itself in the person's social behavior toward both sexes. To express it more precisely, one may have homosexual difficulties in everyday adjustment, to which the sensuous performances of the frank homosexual are absolutely foreign." I went on to say that homosexuality is one of the normal components of the person's adjustment and like

the other partial impulses or components such as looking, touching, tasting, or smelling, it may under certain conditions become more or less pathological.

Two years before I wrote about homosexuality, I discussed its relation to paranoia. In citing such a case which I had studied at the Central Islip State Hospital,[6] I demonstrated Freud's view that the delusion of persecution represented a defense reaction against a homosexual wish fantasy. Following Freud, I showed that there is a close relationship between homosexuality and paranoia, insofar as both are based on narcistic fixations. In the case of paranoia, the libido regresses to the pregenital oral-anal-sadistic organizations, and the destructive ego impulses then become dominant. Instead of loving, the paranoiac defends himself against any erotization. On the contrary, he desexualizes his feelings and by the method of projection, which is characteristic of paranoid thinking, he then hates. Paranoia is really only a distorted homosexuality. In both cases there is a strong mother fixation, which precludes any erotic relations with other women. The homosexual identifies himself with his mother and then selects a love object on a narcistic basis, whom he loves as his mother loved him. Likewise the paranoiac strives to do the same, but fails in his effort. Instead, he runs away from the threatening erotization, desexualizes his feelings, and by projection turns them into hatred. To illustrate:

Case 1. There is the case of a young man of 23 years, the younger of two sons. His father died when he was about three and one-half years old, so that his brother, five years his senior, in a sense took his place for the patient. The mother, a very hard-working woman, took good care of the boys, but paid especial attention to the patient because he was of delicate physical makeup. She died when the patient was about 18. He continued to live with his brother while he finished school. At the age of 19, he obtained a position in a factory manufacturing optical instruments, where he was a steady, good worker for the next three years, so that he was advanced twice during this period. By nature somewhat timid, he made no friends, spending his leisure time in reading and in going about with his brother. A few months before I saw him, he conceived the delusion that his foreman disliked him and that on a few occasions he wished to shoot him. How did he know it? The

foreman had something projecting in his pocket and often put his hand there when he spoke to him. Investigation showed an identification of the foreman with his older brother, and a desexualization when his feelings tended to become erotized. The foreman was quite interested in him and endeavored in every way to help him with his work. As he had had a few sexual experiences with his brother during early childhood, this undoubtedly crept into his unconscious identification of the foreman with his brother, which he forcibly rejected and then converted into the opposite feeling.

This patient complained also of somatopsychic delusions, which analysis showed had a definite bearing upon his past life. Diagnostically, however, this patient was a paranoid schizophrenic. Consequently, the mechanisms were not as clear-cut as one finds them in a pure narcistic fixation, such as paranoia, or in overt homosexuality without any pronounced psychotic symptoms. That even so-called classical inverts are not entirely free from some paranoid traits is quite obvious on even superficial observation. Having encountered hundreds of homosexuals, some of whom were prominent in artistic, philanthropic and other fields, I have never found one who, on closer observation, did not show paranoid traits. They are all oversuspicious, "shadowy," and mistrustful. Most of them are unreliable, intriguing, picayune and impetuous. In brief, all of them show anal-sadistic character traits to lesser or greater degree. I have felt for years that this behavior was engendered by our civilization, where homosexuals are treated as outcasts. However I am convinced that this is only partially true. Most of these traits are due to anal-sadistic fixations and regressions.

There are all sorts of transitional forms, in which either the homosexual or paranoid elements preponderate. Let us consider first the more pronounced forms. The very jealous lovers, married or single, are all paranoid. As Freud puts it: "Delusional jealousy is an acidulated homosexuality and justly belongs to the classical forms of paranoia." Even the normally jealous lovers are concerned only about men whom they consider worthy competitors. They never bother about those whom they consider inferior to themselves, that is, those whom they do not admire. The jealous delusion of the paranoid is but a gross exaggeration of this supposedly normal situation.

Frequently I have been consulted by men who were jealous of fiancées, wives and girl friends, usually without any real basis. My patients were either young men who showed accentuated homosexual components, or men over 35 who were fairly well adjusted to life. As most of them had considerable insight into their condition, it was easy to convince them that they were mistaken. Among them were also some who were on the fringe of paranoia. Let me cite a few cases: M. C. is a bachelor of 49, who is forever looking for a girl to marry. He consulted me about Alice, who was "turned over to him" by a friend, P., whose mistress she had been for a number of years. Examination showed that he had a very strong homosexual attachment to P. and always wanted the women whom P. selected. He was very jealous of Alice and wished to know whether I could cure her of nymphomania. Investigation showed that his suspicions were entirely baseless. After having her watched by detectives for about five weeks, absolutely nothing compromising could be found against her, and an interview with her convinced me that she was in no sense nymphomaniacal. To my question, why he did not marry a nice girl, the bachelor said that if he could find a girl like Mrs. P., he would marry. When Alice was P.'s mistress, he was just as anxious to get her as he now wanted P.'s wife. In brief, what he sought feverishly was to have some sort of sexual union with P., and that could be accomplished only through the woman P. possessed. It was a masked case of *troilism* or *a ménage à trois,*[7] which signifies a sharing of mother with father or brother. In individuals of this type, especially in the extreme cases, predisposition plays a great role.

Case 2. M. C. is a man of 46, who came to me because he was a disgruntled bachelor suffering from moodiness and hypochondriacal symptoms. He was an educated, successful businessman of sound American stock. He was the eldest of four children, three of whom had died in early life. His parents were cultured people of means, the father a scholar of high standing, the mother a fine, somewhat aggressive person. Briefly, the patient gave what might be called a history of a rather weak sexual life. In school and college he had had some homosexual experiences (mutual masturbation, some fellatio) and a few heterosexual experiences in a house of prostitution, neither of which he enjoyed much. He had numer-

ous friends, particularly of the opposite sex, and rumor had it from time to time that he was to marry this or that woman. There was no truth in these reports for all his affairs were of a platonic nature. After I had seen him for a few weeks, during which we made no progress, he finally told me the following story: About four years previously he had consulted a psychiatrist, who had questioned him about his sex life and then advised him to become more active sexually. He was then 42 years old and had had no sexual relations for almost 19 years. He confided in a man who worked for him, a truckman, L., to whom he was very much attached despite the fact that this man was in every way below his station. After a few drinks together, they indulged in mutual masturbation. This was repeated a few times, and on one occasion mutual fellatio took place. But M. C. kept on asking L. whether he could not get him a girl. L. then took him to his home and introduced him to his wife, a woman of 45 years. There developed soon a peculiar sexual situation among the three. It was a sort of troilism although the husband did not always go to bed with them. He was, however, always present, and my patient always insisted that L. should have intercourse with his wife whenever he did. The woman was most compliant to this strange situation. She claimed that she wished to help him because he was so friendly with her husband. She refused to come to a climax, however, saying that this must be reserved for her husband.

It is interesting to note that the patient never directly compensated the couple for this sexual outlet except by employing L. as he had done for years when there was nothing sexual in the situation.

Psychiatrically, M. C. was a schizoid personality with some depressive or euphoric moods, usually within normal range. Psychoanalytically, he was virtually an only child with a strong mother and a rather unaggressive father, who paid little attention to him. In brief, there were all the factors favorable to overt homosexuality, and in addition, there was a weak sexual constitution on the paternal side in at least three generations of the male members. After about a year of treatment the patient married a friend's widow of his own age with three children, and has led a satisfactory heterosexual existence for over ten years.

Many similar cases could be added to show the course of the libido in normal behavior and neurotic symptoms of this type. The sexual manifestations in the transference neuroses are too well known to require here any further elucidation. Hysteria has been connected with sex since the era of Hippocrates. Physicians since have invariably sensed this and discussed it. With the debasement of the sexual instinct since the advent of Christianity, anything which was related to sex was considered degrading. Hence, the hysteric was unjustly stamped as a degenerate, a liar, and so forth. Viewing the psychoneuroses and the psychoses from the standpoint of Freud's libido theory, one not only obtains a logical and comprehensive picture of those maladies, but one also sees an entirely different picture of the child, the neurotic, the psychotic, and the pervert.

88 Central Park West
New York, N. Y.

REFERENCES

1. Freud, S.: Die Sexualität in der Aetiologie der Neurosen. Wieuer klinische Rundschau, 1898.
2. Brill, A. A.: Diagnostic errors in neurasthenia. Medical Review of Reviews, March, 1930.
3. Freud, S.: Neue Vorslesungen zur Einsführung in die Psychoanalyse, p. 183, Int. Psychoanal. Verlag, Wien, 1933.
4. Brill, A. A.: The conception of homosexuality. J. A. M. A., August 2, 1913.
5. ——: Homoerotism and paranoia. American Journal of Psychiatry, March, 1934, and The psychiatric approach to the problem of homosexuality. The Journal-Lancet, April 15, 1935.
6. ——: The psychological mechanisms of paranoia. N. Y. Med. Jour., XCIV, 1911.
7. Cf. Ref. 5.

CLINICOPATHOLOGIC STUDY OF A CASE OF PICK'S DISEASE*

BY ARMANDO FERRARO, M. D., AND GEORGE A. JERVIS, M. D.

The term Pick's disease is used to denote a specific type of progressive dementia occurring in the presenile age period characterized pathologically by circumscribed atrophy of the cerebral cortex.

This condition was first described by A. Pick in 1892 and to date over two hundred cases have been reported in the medical literature. The clinical and pathologic features of the disease are fairly well established at the present time, but the nature of the pathologic process is still the object of much discussion. The original theory of Pick, who included this condition in the group of senile dementias, seems to be falling into progressive disfavor, while it is maintained by a number of investigators that the disease is a specific morbid entity probably on a heredogenerative basis.

Although Pick's disease has received little attention in the United States, the fact that in the last six years some 50 cases have been reported in the European literature (in about half of which a correct diagnosis was made on clinical grounds) is evidence that the disease is more frequent than is commonly thought and that its recognition by means of clinical symptoms and signs is possible in many instances.

Since with each new contribution there will result a clearer concept of the diagnosis and a better understanding of the nature of the disease, this paper will present a clinicopathologic study of an additional case in which the diagnosis was made during the life of the patient.

Case Report

M. A. (No. 280216), a white female, married, 56 years of age. The family history was entirely negative for nervous and mental diseases, reliable information being available concerning grandparents, parents and five siblings. The families of both father and mother were of Swedish extraction.

Patient's early life was uneventful. She had had an average elementary school education and was a dressmaker by occupation. In 1922 she married. Although her married life had been very unhappy, she adjusted herself well to this unpleasant situation. She

*From the department of neuropathology, New York State Psychiatric Institute and Hospital, New York City.

had always been active in her work, friendly and pleasant in her social contacts, and stable in her mood. There was no history of abuse of alcohol, nor of usage of drugs. The menopause occurred at 45 years of age without any unusual mental or physical manifestations.

The first symptoms of the disease occurred about a year and a half prior to admission. The onset was insidious and the course slowly progressive in character. It was first noted that the patient was gradually losing interest in her work. She frequently neglected her daily tasks of housekeeping. Instead, she would sit reading over and over again the same periodical. In her physical appearance, whereas she had been neat, she became slack. Shortly afterward, her brother died and she often imagined that she saw him and talked to him. Whether true hallucinations had occurred, it was difficult to ascertain. Doubtless in many instances, it was a case of mistaken identity. In fact, the husband stated that whenever the patient saw in the street a man showing physical features similar to those of her brother she would run into the street and address him as her brother.

One year later she became more confused; she recognized her husband and sister but mistook the identity of other persons very familiar to her. Although during the day she complained of being tired and would frequently lie down, she would become restless at night. Her mood varied from a mild depressive state to euphoria. Her memory was obviously impaired. The defect, however, varied from day to day; in general, those things which had occurred before the last two years were well recalled but she could remember very little of the immediate past. No symptoms suggesting aphasia or apraxia were ever noted by her husband. On August 9, 1935, she was admitted to the New York State Psychiatric Institute and Hospital.*

Status on admission

On the ward, the patient was usually seen sitting passively on a bench. When asked to help with work she would answer affirmatively but would make no further response. During interviews, she seemed restless and hyperactive. After coaxing she answered all the questions quickly in a precise way. Her answers usually

*Drs. K. Goldstein and S. Katz (2) made in life the diagnosis of Pick's disease and used this patient to illustrate theoretical psychopathologic conceptions of the functioning of the frontal lobes.

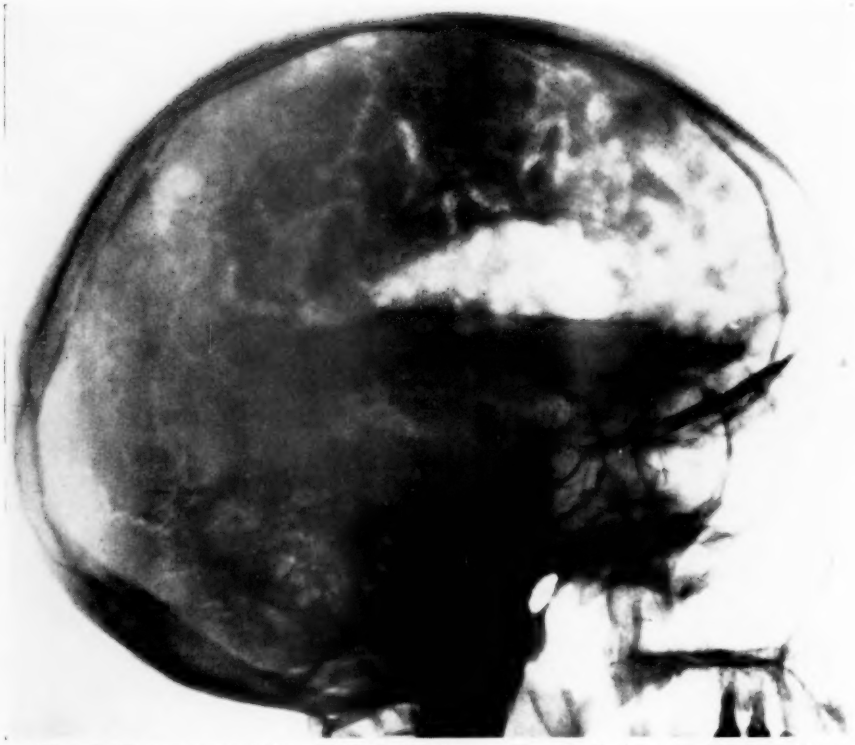


Fig. 1. Pneumoencephalogram showing large amount of air over the frontal lobes and enlargement of the lateral ventricles.

consisted of a single sentence and were markedly uniform in content. When speaking, she displayed an expression of anxiety in her face and in her voice, waiting to see if her answer would fit into the situation properly. The stream of mental activity appeared diminished in quantity and stereotyped in content but showed no definite pathologic trends. Spontaneous productivity was lacking. Usually her mood remained constant, showing mild euphoric coloring. In a test situation, however, she would exhibit a certain irritation at any failure. Considerable memory impairment was noted. The memory defects were much more pronounced for the immediate past while facts of the remote past were remembered fairly well. The patient was able to repeat six digits but as soon as a short time elapsed she could not recall the figures. Counting was poor, the patient omitting numerous figures. She constantly failed to count backwards. She was unable to perform simple calculations. Drawing was fairly well performed but only so far as reproduction of concrete objects was concerned. For instance, she was able to copy a window or a cross but not a circle or a triangle; these last she could not recognize. There was considerable perseveration in the visual and motor fields as shown in numerous test situations. At times, echolalia was observed. Insight and judgment were very poor.

Physical examination was essentially negative. Blood pressure was normal. The fundi showed nothing of significance.

Blood and spinal fluid examination gave negative results. The encephalogram showed enlarged lateral ventricle and a large amount of air over the frontal lobes, particularly in the polar region where the sulci were widened and the gyri narrowed. Some widening of the sulci was also noted in the temporal region but this was not so marked as in the frontal lobe (Fig. 1).

Course

During her stay in the Psychiatric Institute, the patient presented slow progressive deterioration. She gradually became less orderly in her dress and in her personal hygiene. She no longer remembered her physician's name, was slow in all her movements and walked about as though in a slight daze. Gradually she began to speak less and less English and reverted almost completely to

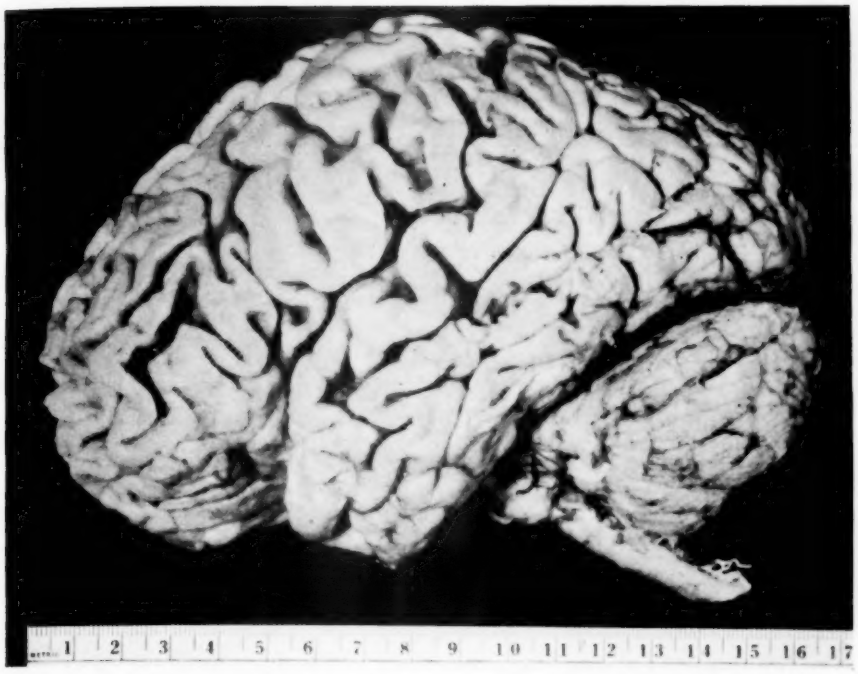
her native tongue, Swedish. She was discharged on September 30, 1936, and committed to Rockland State Hospital. During her stay there, the patient deteriorated steadily both mentally and physically. She used to sit about the ward with an immobile facial expression, her only reaction being frequent bursts into silly laughter. She showed marked echolalia, frequently repeating the last words of a question. Occasionally, she would mumble something unintelligible. From January, 1937, peculiar attacks were observed. These were characterized by generalized muscular hypotonia and pallor, but no convulsive seizures or muscular twitchings. After each attack, she would recover quickly. No cardiac abnormalities could be detected.

Extreme dementia had become established in the summer of 1937. The patient then led a purely vegetative existence; she wet, soiled and lost considerable weight. In January, 1938, she was confined to bed and on March 1, 1938, she showed symptoms of bronchopneumonia. Death followed on March 5, 1938.

Pathologic examination of the brain

The brain weighed 800 gm. It was slightly asymmetrical, the left hemisphere being smaller than the right. The leptomeninges were thickened over the frontal and temporal poles, but no adhesions between meninges and cortical matter were present. The visible blood vessels showed no signs of arteriosclerosis. Focal atrophy was striking (Figs. 2a and 2b). Of the frontal lobes, the superior and middle frontal gyri were markedly atrophic; the inferior frontal gyrus was atrophic in its anterior two-thirds, the posterior third being less severely involved. Severe atrophy was present also in the orbital gyri and the gyrus rectus. Precentral and postcentral gyri were grossly normal so that a striking contrast resulted between the whole central region including the paracentral lobule and the rest of the brain.

The superior and inferior parietal gyri and the quadrate lobule showed moderate diffuse atrophy. Of the parietal lobe, the supramarginal gyrus was the most atrophic region. The temporal lobe was also involved although not so severely as the frontal lobe. The process involved the middle and inferior temporal gyri, less so the superior one. The changes were more pronounced in the anterior



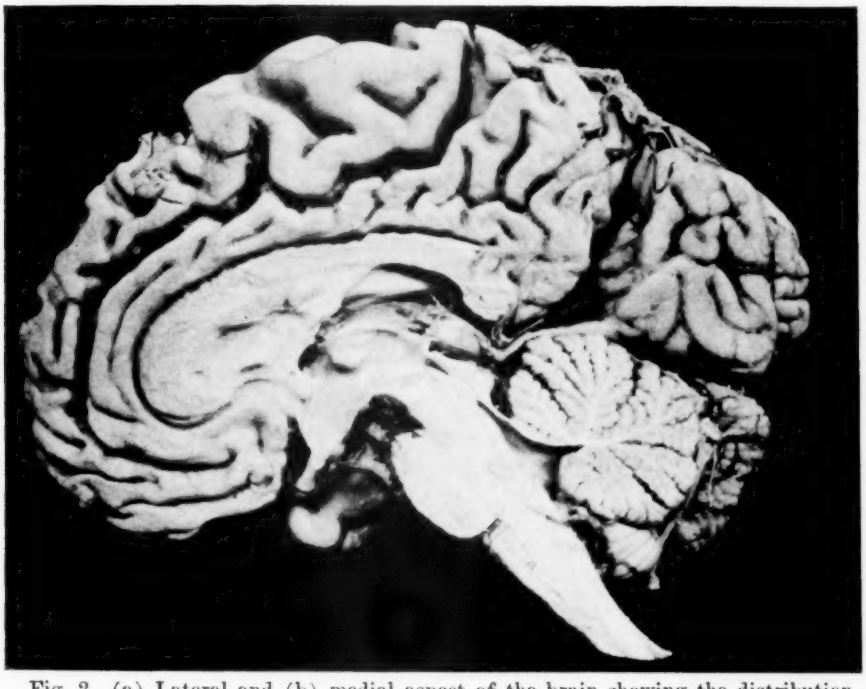


Fig. 2. (a) Lateral and (b) medial aspect of the brain showing the distribution of focal atrophy.

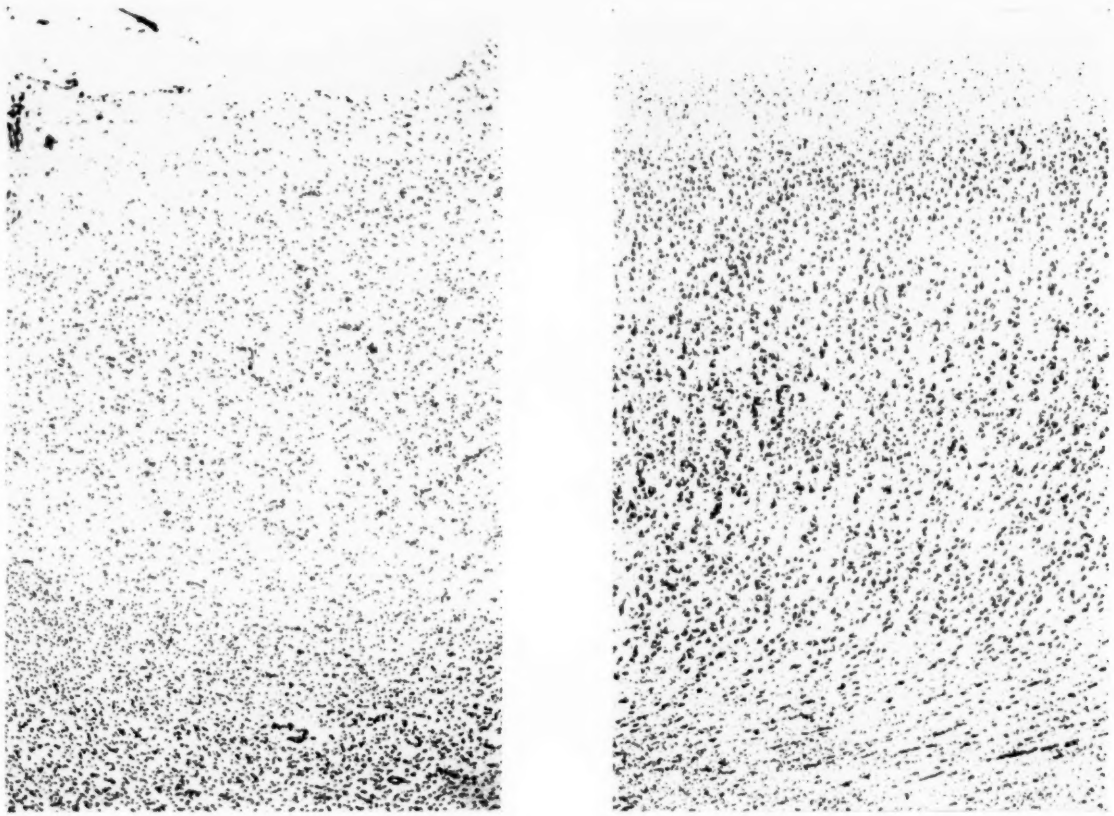


Fig. 3. (a) Frontal region (Nissl's stain). (b) The same region at the same magnification in a normal individual (from Economo).

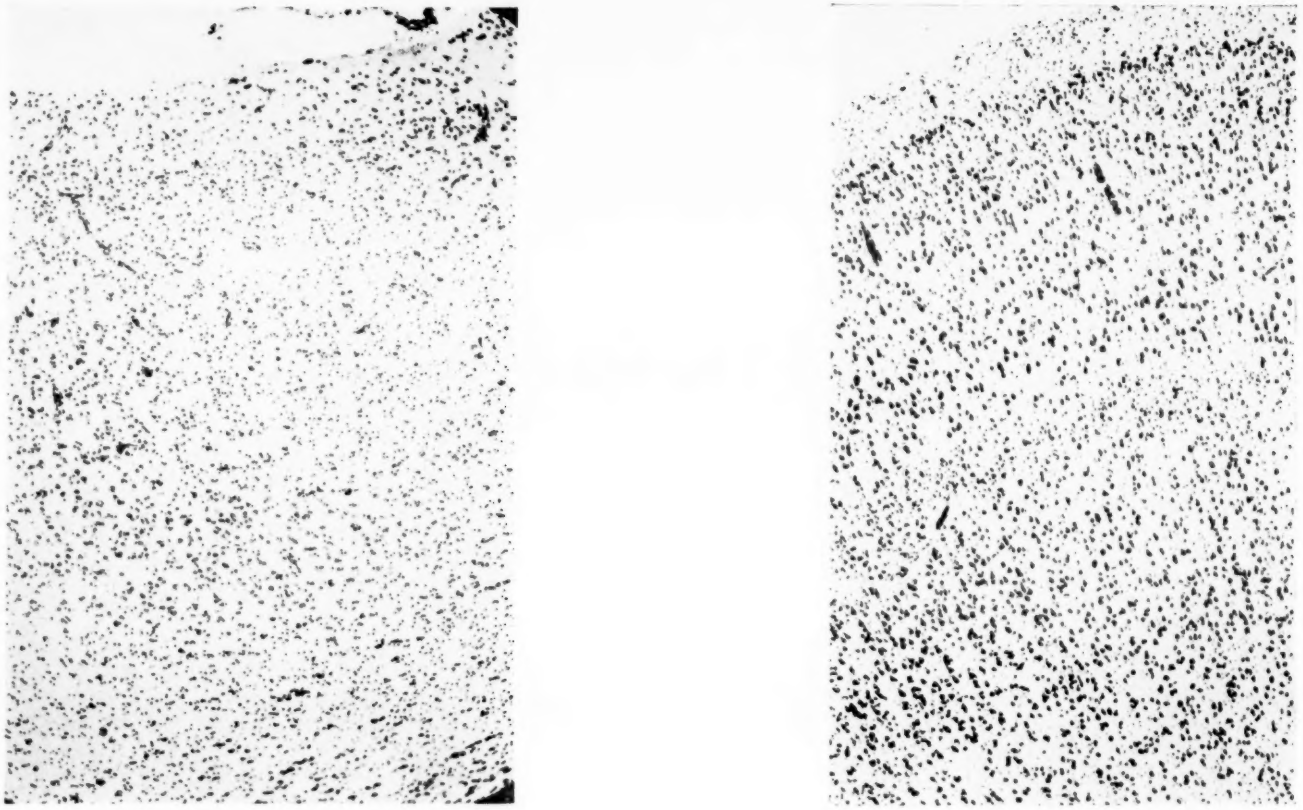


Fig. 4. (a) Temporal region (Nissl's stain) (b) The same region at the same magnification in a normal individual (from Economo).

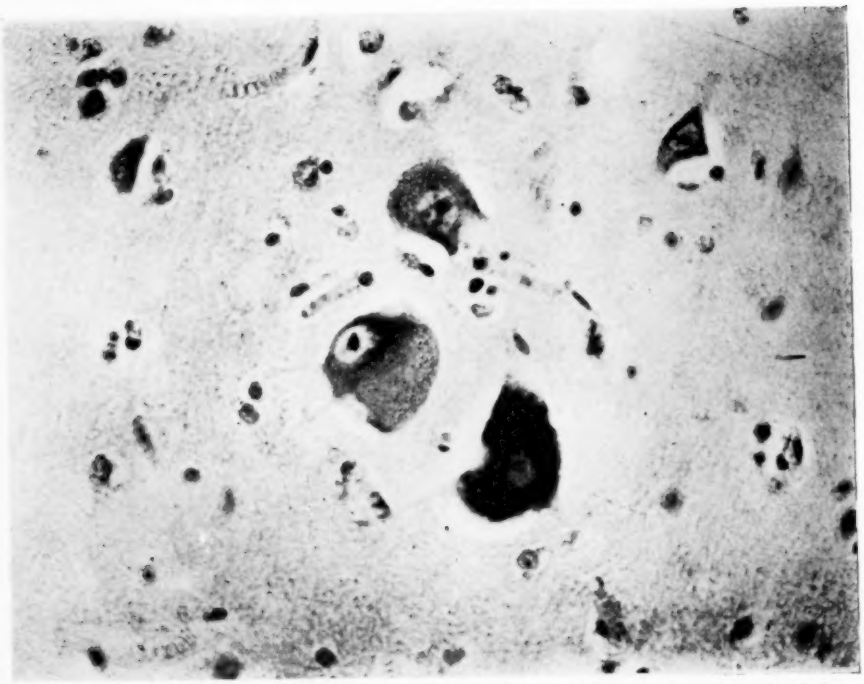


Fig. 5. Neuron cells at different stages of swelling. (One of the cells is loaded with pigment). (Nissl's stain).

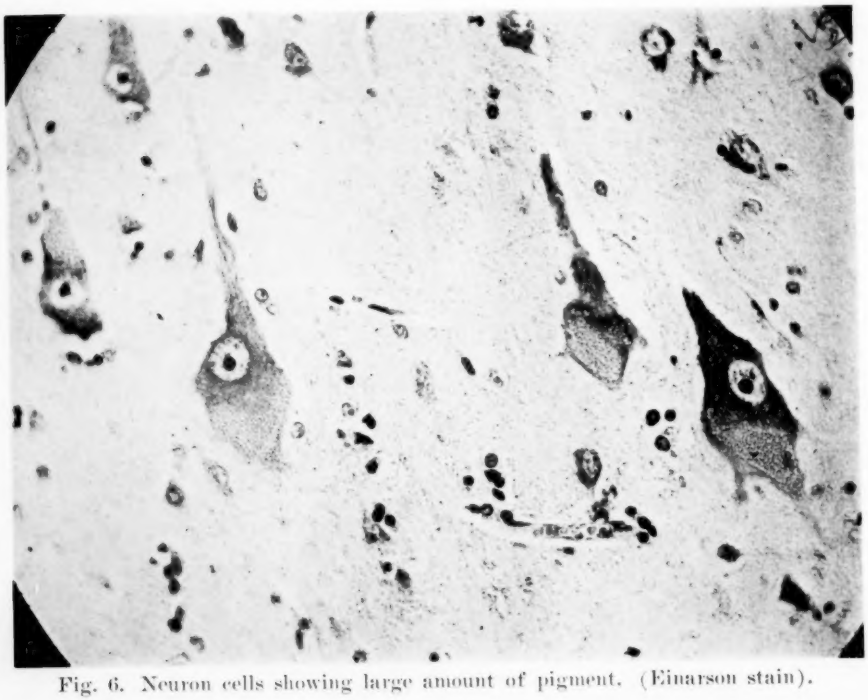


Fig. 6. Neuron cells showing large amount of pigment. (Einarson stain).

half. Fusiform and hippocampal gyri showed little atrophy. The cingular gyri appeared almost normal grossly.

The occipital lobes were better preserved, a slight atrophy being diffusely present in the lateral occipital gyri. The insula was also considerably atrophic in its anterior portion. The basal nuclei appeared reduced in size, especially the caudatus. There was ex-vacuo dilatation of both lateral ventricles. The cerebellum, brain stem and pons appeared grossly normal.

Histologic examinations

Sections of the various regions were stained with the following methods: Nissl, Bielschowsky and Einarson for neuron cells, Sudan III and Scarlet R for fat, Spielmeyer and Weigert for myelin, Cajal, Holzer and Hortega for glia, Turnbull for iron, Levaditi and Braunmühl for senile plaques.

The histologic findings will be reported under two headings: (1) Severely atrophic areas, (2) mildly atrophic areas.

(1) *Severely atrophic areas*: In Nissl's preparation, a large number of ganglion cells had disappeared and the glia had proliferated (Figs. 3 and 4). The normal cytoarchitecture of the cortex was no longer recognizable. Status spongiosus characterized by small cavitations in the tissue was occasionally observed in the region corresponding to the third cellular layer. At high power, it was observed that the few remaining neuron cells showed marked alterations. Shrinkage of the cell body with picnosis of the nucleus was the most frequent feature. A few cells showed a characteristic swelling (Fig. 5). It consisted of enlargement of the cytoplasm, disappearance of the Nissl body, displacement of the nucleus toward the periphery. Moreover, almost all the neuron cells were loaded with a pigment which stained blue greenish with thionin, reddish with Sudan III, and was insoluble in alcohol, acetone and ether (Fig. 6). Silver impregnation technique, including Bielschowsky, DeFano, Braunmühl, Levaditi and Hortega's methods, failed to show senile plaques. The characteristic neurofibrillary alteration of Alzheimer was also absent. In the cytoplasm of a few neuron cells a peculiar roundish inclusion was seen which appeared deeply impregnated with silver (Fig. 7). Concomitantly with the destruction of nerve cells, proliferation of replacing macroglia had

taken place. The increase was very marked in the superficial layers where a thick marginal gliosis was often seen in Holzer's preparations. Degenerative changes of macroglia were not present, the alteration being limited to hypertrophy and hyperplasia with tendency to fibrillary gliosis. The hypertrophic glia cells often contained a pigment similar in character to that found in the neuron cells.

The white matter as seen in Spielmeyer and Weigert preparation showed marked demyelination (Fig. 8). This was irregular in distribution, some areas being almost deprived of myelin while adjacent areas were less severely involved. High-power study of the demyelinating process revealed varying stages of thinning and breaking down of myelin; pronounced swellings of the myelin sheaths were absent. Staining with Scarlet R and Sudan III showed no compound granular corpuscles in the demyelinated areas nor fat, free in the tissue. Occasionally, a few cells loaded with fatty-like substance were observed in the perivascular spaces. There was marked glia proliferation in these demyelinated areas, the Holzer stain showing a marked increase of fibrillary glia (Fig. 9). There was no correlation between demyelination and glia proliferation, the latter being more marked than the former. The hypertrophic changes of the glia were far more intense in the white matter of the cortex than in the gray matter, so that contrary to the normal, in nuclear stains the former appeared much richer in cells than did the latter.

The cortical blood vessels appeared increased in number but obviously this increase was only apparent, being due to the considerable shrinking of the tissue. No arteriosclerotic alterations were noted.

Iron was observed to be moderately increased in the atrophic areas; it appears as small granules collected within glia cells or in the perivascular spaces. Moreover, the pigment which filled the neuron cells showed a faintly blue color in the Turnbull preparations.

(2) *Mildly atrophic areas*: In these areas the loss of nerve cells and the compensatory proliferation of glia were less marked. The cytoarchitectural patterns of the cerebral cortex were still recognizable although considerably altered. As noted by numerous

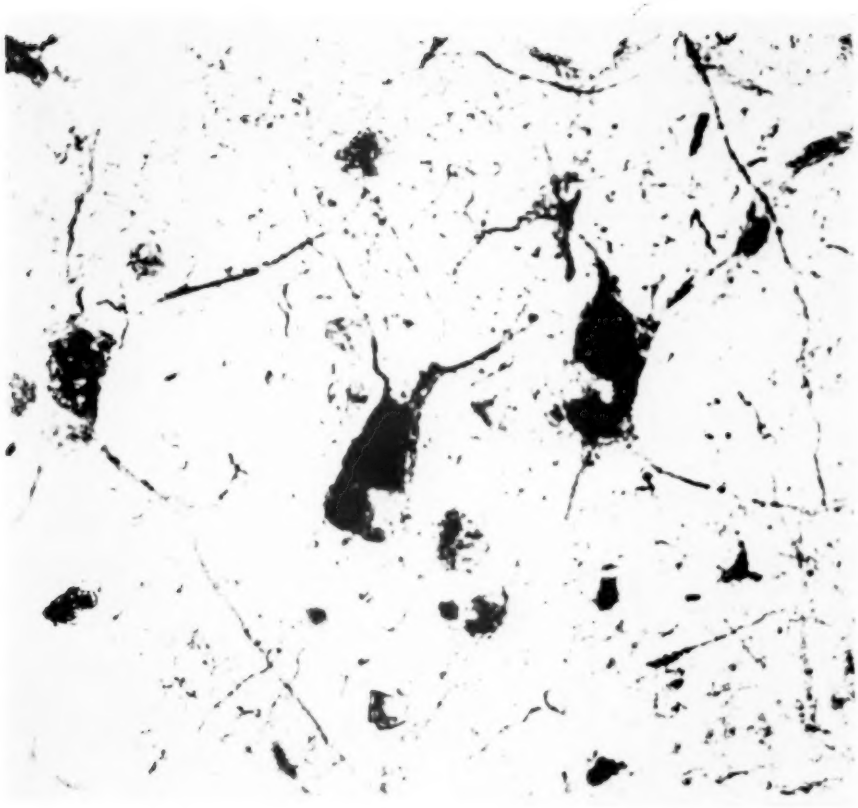


Fig. 7. Neuron cells showing, beside the nucleus, an argentophil corpuscle. (Bielschowsky stain).

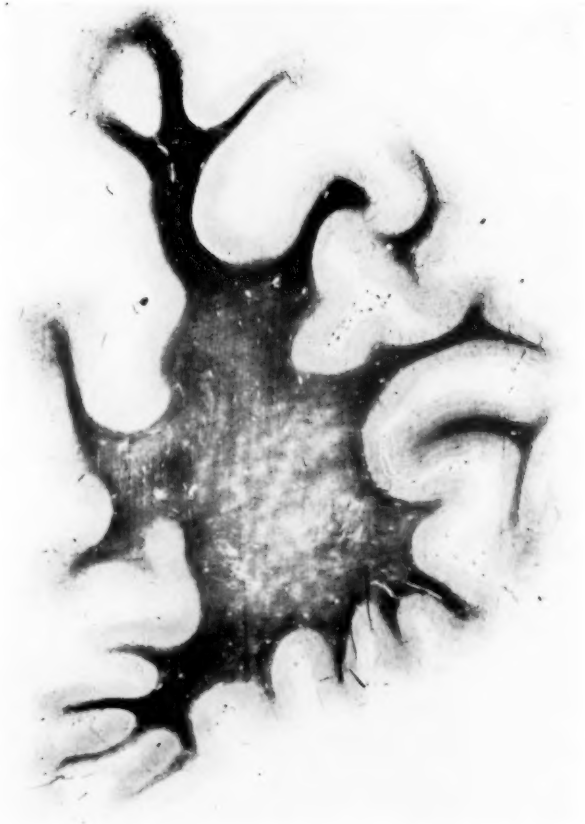


Fig. 8. Weil's preparation for myelin sheaths showing diffuse demyelination in the frontal lobe.

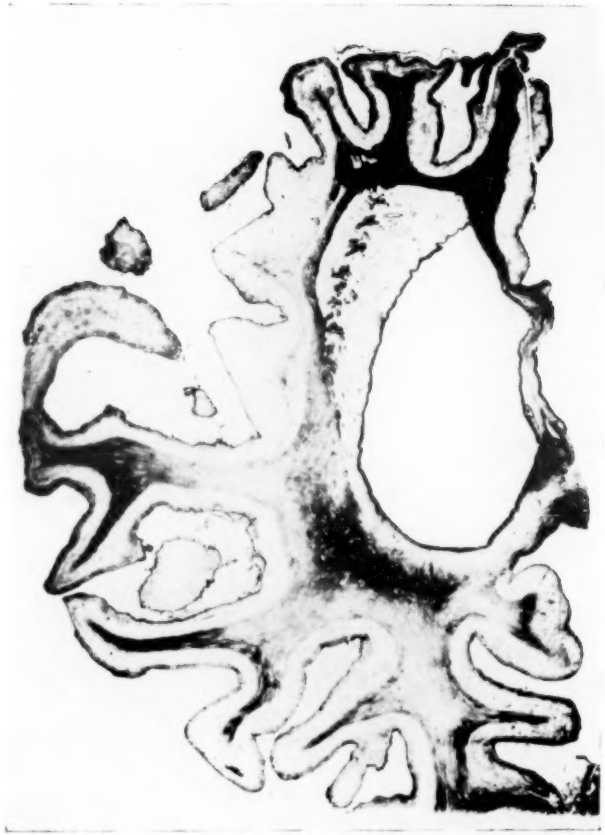


Fig. 9. Holzer's preparation showing marked gliosis of the white matter.

investigators, the third layer was more frequently involved by the atrophic process. However, this was not without exceptions, the fifth and sixth layers being at times more atrophic than the third. The reaction of the glia showed no differences, except in intensity, from that observed in the severely diseased areas. Characteristic swellings of the nerve cells were seen frequently; within the cytoplasm of numerous cells a large amount of fatty-like substance was collected which was insoluble in alcohol, ether, acetone and xylol. It stained dark red with Scarlet R, black with Sudan Black and appeared greenish in Nissl preparations. Not infrequently the cell body infiltrated with this lipoid substance appeared distorted. With silver stains, argentophilic bodes were seen only occasionally. In myelin preparations, there was a considerable disappearance of the tangential fibers of the cortex. The white matter showed the same type of lesion as described in the severely diseased areas, although the pathologic process was much less marked.

In the basal nuclei, particularly the striatum, a process of neurocellular atrophy and proliferation of the macroglia had taken place. The small cells of the putamen appeared more involved than the large cells. Swelling of single nerve cells and infiltration with lipoid substances were frequently observed.

The cerebellum showed a diffuse decrease in the number of Purkinje cells. These exhibited no intracellular lipoids. The neuron cells of the dentate nuclei were considerably affected; the cytoplasm was swollen, being filled with a large amount of lipoid, and the nucleus was displaced to the periphery. There were no significant changes in the substantia nigra, and in the pontine nuclei. The cells of the inferior olives showed the same striking pathology which was observed in the dentate nuclei of the cerebellum.

The spinal cord was not available for examination.

Comment

Two clinical types of Pick's disease are generally recognized; one characterized by dementia alone, the other by the association of mental deterioration with neurological signs, chiefly aphasia.

The *mental symptomatology* consists essentially of a progressing dementia, the main features of which clearly indicate the organic reaction type. Thus, our patient showed the intellectual impair-

ment, the affective disorder and the character change which constitute the organic syndrome.

However, when the atrophy involves the frontal lobes, as in the present case, peculiar features of the mental syndrome can be observed which appear characteristic enough of the early stages of Pick's disease to be worthy of a brief comment. As stressed by numerous investigators, these patients seem at times deeply demented whereas at other times their performances seem amazingly correct. There seems to be agreement in the opinion that there is no permanent intellectual defect but rather some interference with the activation of mental mechanisms variously referred to fluctuation of the level of attention ("impulse to distractibility" of Schneider[3]), to "lack of constancy of concentration" (Stertz[4]), and to memory impairment (Urechia[5]). Recently, Goldstein and Katz[2] attempted a new suggestive interpretation of these discrepancies in behavior, based upon a fundamental division of human attitudes toward the world into two types: 1. A concrete attitude "in which one is directed towards given objects and in which thinking and acting are directed by them," and 2. An abstract attitude "in which one is first moved to think about the objects and is conscious of them." In patients affected by Pick's disease, the abstract attitude is lacking while the concrete attitude is relatively well preserved. This would readily explain apparent contradictions in performances. Thus, the whole behavior of our patient was determined by the concrete stimuli of a given situation; as long as the patient was able to utilize ordinary objects from a concrete approach her performances failed to show important deviation from the normal. Her daily tasks of sweeping the floor, knitting, opening a locked door, et cetera, were correctly performed because of their concrete nature. However, when an abstract attitude was necessary for her performances, as for instance when the task demanded that she use abstract, spatial or temporal relations, her performances failed. Likewise, attention and interest were lacking in situations which demanded an abstract attitude, while during concrete performances, the attention was sustained and the interest keen. Further, Schneider,[3] Stertz[4] and others have stressed the fact that these patients show a peculiar "inability to elaborate new mental combinations" or "to adapt themselves to new situations."

This also can be explained by the lack of abstract attitude in the behavior of the patient since a new situation with its changing demands often requires changing of one's attitude from the concrete to the abstract level.

Concerning memory defect in Pick's disease, there is sufficient agreement that the memory of remote past is better preserved than the memory of recent events and that acquisition of new mnemic material is considerably impaired. However, contradictory performances are often recorded in the clinical histories. Patients remember insignificant details at times whereas at other times important facts are entirely forgotten. Here again, this discrepancy may be interpreted as incapacity for an abstract type of behavior. For instance, the memory of our patient appeared unimpaired insofar as execution of normal concrete tasks were concerned, the mnemic patterns being along concrete lines; of a concrete figure she could remember even small details. But when she was asked to recall things that had nothing to do with a given concrete situation, her memory suddenly failed. That her acquisition of new material was scanty may be explained by the fact that abstract attitudes play an important role in the formation of new mnemic engrams.

Confabulations and hallucinations do not belong, as a rule, to the mental picture of Pick's disease, the absence of these symptoms being a differential criterion between presbyophrenia and Pick's disease. In the present case, there was some tendency to cover up memory defects with fabrication. It will have been noted, however, that such falsifications were not so rich in content as seen in presbyophrenia. Moreover, the severe memory defect and the marked disorientation which are characteristic of presbyophrenia were absent. Finally, instead of the buoyant elation of the presbyophrenic, the patient showed apathy, with mild euphoria, as often observed in Pick's disease. Hallucinations apparently occurred. It will be seen from the history, however, that the hallucinatory experiences were never vivid; there was some evidence that in many instances illusions rather than hallucinations had occurred.

Neurologic symptoms and signs are often observed in Pick's disease. The outstanding feature consists of disturbances of the speech mechanism. In about 25 per cent of the cases, aphasic symp-

toms occur at early stages of the disease, when the patient's mental condition still permits a careful examination. In these cases, the diagnosis is greatly facilitated. Our patient showed no aphasia. It was observed, however, that she made no effort to speak, showing that "aversion to react by language" which according to Stertz[4] is commonly found in early stages of Pick's disease. At a later period, it was noted that the verbal activity of the patient was reduced to a few Swedish words. That this was the expression of motor aphasia was doubtful, since, obviously, in a state of advanced dementia it is difficult to discriminate between intellectual deterioration and altered speech mechanism. Singular attacks of general hypotonia which appear characteristic of Pick's disease were observed. They consist of sudden muscular hypotonicity, extending to all muscles so that the patient is unable to stand up. The duration is of a few minutes. The recovery is rapid and complete. The attack is similar to the cataleptic fit which is observed in narcolepsy; however, the affective component characteristic of narcolepsy is absent.

The *differential diagnosis* offers considerable difficulty. In the present case, senile dementia and psychosis due to cerebral arteriosclerosis were easily ruled out, the former because of the age of the patient, the latter mainly because of the absence of physical signs of arterial involvement. The exclusion of a brain tumor involving the frontal lobes was made on the basis of lack of increase in intracranial pressure and upon examination of the X-ray plates.

The pneumoencephalic picture gave extremely valuable diagnostic aid in showing characteristic air filling in the subarachnoidal spaces over the frontal regions.

The most difficult diagnostic problem was to differentiate Pick's from Alzheimer's disease. As is well known, the age of onset, the duration and the rapidly progressive organic dementia are common to both conditions. However, in Alzheimer's disease, the type of behavior above referred to is not observed. Here the cortical lesion is diffuse and the so-called elementary performances are usually also defective. From the very beginning, the memory is severely impaired in Alzheimer's disease and even images of concrete nature are lost. Furthermore, the encephalographic findings

are different, showing diffuse cortical atrophy in Alzheimer's disease, whereas circumscribed atrophy is found in Pick's disease. Finally, a diagnostic criterion is offered by the occurrence of epileptic seizures. These are present early in Alzheimer's disease and are frequent and severe in character. On the contrary in Pick's disease epileptic fits are generally absent (as in the present case) or, if present, they occur only in the terminal stages.

The *pathological examination* confirmed the clinical diagnosis of Pick's disease in that it showed circumscribed atrophy of the brain cortex. The distribution of the atrophy was that of the large majority of cases, i. e., the frontal lobe with the exception of the precentral gyrus and, to a less extent, the temporal lobe, particularly the second and third temporal convolutions. It will be noted that the posterior part of the left third frontal gyrus (Broca's center) was far less atrophic than the other parts of the frontal lobe, a finding which might explain the absence of motor aphasia in the clinical picture. Of interest, is the fact that the basal portion of the frontal lobe was more severely involved than the convexity. As seen in Fig. 9, the orbital area was particularly shrunken and gliotic. Recently Spatz[6] called attention to this localization of the atrophic process, and maintained that in this region is to be found the primary area of atrophy. According to the view of this investigator, a lesion of the basal part of the frontal lobe results in impairment of the "high and more complicated psychic performances," or, using Goldstein's terminology, of performances requiring abstract attitudes. The findings in the present case seem to confirm such view; it is likely that the orbital region, which was the most shrunken, was affected at the first stage of the disease at the time when the particular behavior above discussed was observed.

The microscopic examination added little further. The pathologic picture was typically that associated with Pick's disease, i. e., atrophy of nerve cells with compensatory glia reaction, presence of neurocellular "swellings" and of intracellular argentophil corpuscles, absence of senile plaques, of Alzheimer's neurofibrillary changes and of arteriosclerotic alterations. The extensive destruction of myelin sheaths and their replacement with fibrotic glia found in our case is not an exception in cases of Pick's disease. This has been observed by several investigators (Mingazzini,[7]

Schneider,[3] Braunmühl,[8] et cetera). Of interest is the presence of large amounts of lipoids within the neuron cells. The staining property of the lipoid granules and their insolubility in alcohol, ether, acetone, xylol and benzene clearly indicate that the lipoids belong to the group of lipochrome pigment, which is characteristic of senile neuron cells. The extensive pigmentary surcharge of the third and fifth layers of the cortex, the severe involvement of the dentate nucleus and the inferior olives agree well with the findings of Gellerstedt[9] in senile brains.

The problem of the nature of Pick's disease is still unsolved and is the object of much discussion. From the very beginning, two divergent theories were expressed. Pick[1] considered the condition to be a variety of senile dementia whereas Reich[10] attempted to establish Pick's disease as a specific pathologic entity upon a heredodegenerative basis and independent of senile processes.

In a previous paper,[11] we made a critical analysis of the numerous arguments brought forward in favor of the heredogenerative theory; it was concluded that such theory rested on too few factual data to be considered as proven. On the other hand, the pathologic features of the disease bear certain undoubted similarities to senile reactions. As a matter of fact, the slowly progressive atrophic process involving neuron cell and myelin sheath is entirely characteristic of senility. It is indeed this pathologic type of primary "simple" atrophy that may offer a clue for the correct interpretation of the disease. As recently pointed out by Spatz,[12] pathologic processes do occur which are characterized by a simple atrophy of a limited portion of the brain. They may be grouped under the same heading of "systemic atrophies" (Spatz) and be attributed to probably similar pathogenic mechanisms. It is of considerable interest to note that these atrophies often occur in a late period of life. Thus cortical atrophy (Pick's disease), atrophy of the striatum (Huntington's chorea) and certain types of cerebellar atrophies (Brown,[13] Holmes[14] and Critchley[15]) are generally observed in the presenium or senium.

The similarities between the pathologic lesions of Pick's disease and senility are striking enough to make it reasonable to assume that Pick's disease represents a senile process limited to a determined zone of the brain. In other words, in these patients, certain

areas of the brain are prone to age more rapidly than others. That angiospasm may play a role in the pathogenesis of the process, as assumed in a previous paper,[11] is possible, although in the present case histological evidence for this hypothesis was not as convincing as in previous cases. Since precocious ageing of tissue in some instances is known to be genetically determined, it is also possible that genetic mechanisms are of some significance. As a matter of fact, a few cases of the disease occurring in siblings have been recently reported.

Although this hypothesis of a premature and localized neuronic ageing remains unproven insofar as there is no histologic feature pathognomonic of senile brain, it may offer an incentive for further study.

Psychiatric Institute and Hospital
722 West 168th Street
New York, N. Y.

REFERENCES

1. Pick, A.: Ueber die Beziehungen der senilen Hirnatrophie zur Aphasie, Prag. med. Wchnschr. 17:165, 1892. Studien zur Lehre von Sprachverständnis, Berlin, 1898. Ueber eine eigenthümliche Sehstörung senil Dementer, Jahrb. f. Psychiat. u. Neurol. 22:35, 1902. Zur Symptomatologie der linksseitigen Schlafenlappenatrophie, Monatschr. f. Psychiat. u. Neurol., 16:378, 1904. Ueber einen Symptomenkomplex der Dementia senilis bedingt durch umschriebene Hirnatrophie, ibid. 19:97, 1907. Die umschriebene Hirnatrophie als Gegenstand klinischer und anatomischer Forschung, Berlin, 1908.
2. Goldstein, K., and Kätz, S. E.: The psychopathology of Pick's disease. Arch. of Neurol. and Psychiat., 38:473, 1937.
3. Schneider, C.: Ueber Picksche Krankheit. Monatschr. f. Psychiat. u. Neurol., 65:230, 1927.
4. Stertz, G.: Ueber Picksche Atrophie. Ztsch. f. d. ges. Neurol. u. Psychiat., 101:729, 1926.
5. Urechia, C. J.: Contribution a l'étude de la maladie de Pick, Encéphale, 25:728, 1930
6. Spatz, H.: Ueber die Bedeutung der basalen Rinde. Ztsch. f. d. ges. Neurol. u. Psychiat., 158:208, 1937.
7. Mingazzini, G.: On aphasia due to atrophy of the cerebral convolutions. Brain, 36:493, 1914.
8. von Braumühl, A.: Zur Histopathologie der umschriebenen Grosshirnrindenatrophie. Virchow's Arch., 270:448, 1928.
9. Gellerstedt, N.: Zur Kenntnis der Hirnveränderungen bei der normalen Alterinvolution, Upsala, 1933.
10. Reich, F.: Ein Fall von alogischer Aphasie und Asymbolie, Allg. Ztschr. f. Psychiat., 62:825, 1905, and 64:380, 1906. Aphasie oder Alogie. Arch. f. Psychiat., 46:1234, 1910. Zur Pathogenese der circumscripten resp. systemartigen Hirnatrophie, Ztsch. f. d. ges. Neurol. u. Psychiat., 108:803, 1927.
11. Ferraro, A., and Jervis, G. A.: Pick's disease. Arch. of Neurol. and Psychiat., 36:739, 1936.
12. Spatz, H.: Die systematischen Atrophien Arch für Psychiat., 108:1, 1938.
13. Brown, S.: On hereditary ataxia. Brain, 15:250, 1892.
14. Holmes, G.: A form of familial degeneration of the cerebellum. Brain, 30:466, 1907.
15. Ferguson, F. R., and Critchley, M.: A clinical study of a heredofamilial disease resembling disseminated sclerosis. Brain, 52:203, 1929.

SUICIDE AS WISH-FULFILLMENT*

BY IVES HENDRICK, M. D.

The subject of this paper is an unconscious phantasy which was acted out in an almost successful suicidal attempt. The analysis of this phantasy, and of its relationship to a psychotic component of the patient's previous life, disclosed fundamental differences between the mechanism of this suicide and those which occur during depressions.

History and Analysis

The patient was an unmarried, professional woman, 38 years of age. Two and one-half years before treatment began, she had taken 20 allonal tablets with suicidal intent and was found asleep in a woods. After a brief hospitalization, she resumed her work and her social activities. Two years later she deliberately "rolled off" a high bridge very late one night into the icy waters of a large river with the intention of drowning herself.

It is the analysis of this second suicidal attempt which primarily concerns us here. An amnesia for the 16 hours which preceded it was nearly complete. The only recollections of this experience were that she had left her home in her automobile early the preceding morning; she had "driven in circles" all day; she had had nothing to eat; late that night she had found herself on this unfamiliar bridge several hundred miles from home, and left her car at the entrance to the bridge. She learned later that a passerby had seen her fall from the bridge. She was rescued, hospitalized for two weeks, and spent the subsequent six months in her mother's home. During this period she had avoided all people, including her family, was mentally unable to resume her work or normal recreations, and had been preoccupied with phantasies, anxieties, and hallucinations of a predominantly schizophrenic type.

The patient had always manifested pronounced schizoid characteristics. In some sharply-limited aspects of her life before the suicidal attempts she had been psychotic, but this had been not at all obvious. She was attractive in superficial relationships, and had achieved a well-deserved success in a profession requiring good adjustment to both children and adults. She had enjoyed a modest

*Read at the meeting of the American Psychoanalytic Association, December 28, 1935.

amount of social life, chiefly but not entirely among unmarried women, and had demonstrated special ability for artistic sublimation. She had rationalized her unconscious identification with the prohibitive attitudes of a dogmatically religious and very dominant mother, by a rigidly imposed intellectual concept of how life ought to be lived.

The patient was the third of four siblings. A brother, two years older than she, had served as an aviator during the World War, attained the status of "ace," and had been shot down and killed in aerial combat. His heroic death was the final event of an unusually hero-like life. During childhood, school and college, he had been idolized by family and friends, especially by his mother and the patient, not only for his popularity and genuine achievements in scholarship, sports, and leadership among men, but also for his Galahad-like virtues. He had had, so far as his family knew, no love affairs. This had always distressed the patient and she passionately hoped that he had enjoyed relations with women in France before his heroic death. When angered by her mother during the analysis, the patient taunted her viciously by suggesting this possibility.

Her own deeper attitude toward erotic sexuality had, however, closely resembled the asceticism of her brother, although this was intellectually denied. As a young woman she had been engaged four years without a kiss to a pious youth who was highly approved by her mother. But immediately after the news of her brother's death she had renounced him, left home and in a distant city indulged her sexuality promiscuously; during these relationships she always phantasied that her brother had behaved in a similar way in France. In later years, she had seriously considered marrying several lovers, but all these men had seemed to her either intellectually or socially very inferior to herself. Her two strongest affects for men were contempt for those she came to know well, and a constant fear of any superior man's evincing his "male conceit." Her attitude to her kindly but unambitious father had never been free from contempt for his lack of worldly achievement or of authority with her mother.

As soon as these dominant features of her heterosexual life and family attitudes were clear to the analyst, the patient was told:

"The only man you have really loved is your brother. You treat those with whom you have tried to make love as though they were your father—not so worthwhile as yourself and not so worthwhile as the rest of the family." Her reaction to this interpretation enabled us to work out some of the repressed phantasies associated with her second suicidal effort. For almost all of this material there had been complete amnesia before the interpretation.

She recalled that before leaving her apartment on the morning before she dropped from the bridge, she had decided to commit suicide in one of two ways: either by repeating the program of her first attempt by going into a woods, taking a lethal drug, and burying herself; or else by taking a boat to Europe and drowning herself in the ocean when exactly half way across. She had prepared herself by donning special clothes including a sweater of a special shade of blue. She had decided to arrange her death so that the family would not learn of it for two months and there would be no funeral. She recalled several forgotten incidents of the 16-hour drive, and very vividly the experience of driving for hours " 'round and 'round in circles." She did not at first recall how or why she finally arrived in the neighborhood of the bridge, but remembered vividly striking the water on her ear.

Her associations during the recovery of these memories showed that many details were reminiscences of the death of her brother. His airplane was reported to have fallen in a woods, and he had been buried there. This had occurred in Europe; and when she had accompanied her mother to Europe, she had refused to visit the brother's grave because she hated her mother's self-glorification of herself for being the mother of a hero (unconsciously her mother's pride that her son was too fine to be sexual). The special clothes she had worn after deciding on suicide were associated with tomboy activities which had been conspicuous traits of her childhood; and the shade of blue of the sweater approximated a shade she adored because it was the color of a sweater worn while playing baseball with her brother. The idea that she would not have her death discovered for two months because she did not wish to be the object of her family's sanctimonious hypocrisy at funerals was a rationalization of the thought that her brother had died without a funeral, and that the family had not learned of his death until ex-

actly two months after it had occurred. Her memories of driving in circles and striking on her ear were now associated with vivid visualizations of the airplane falling in circles and striking diagonally on its wing.

Thus the patient discovered that she had wished to die in the same way her brother had died; that she had dressed in clothes associated with her childhood identification with him in playing baseball; that her two original plans for suicide were derived from the place he died—in the woods in Europe; that the family would learn the news after the same interval of time which had elapsed after the hero's death; and that she had imitated the falling airplane in her 16 hours of driving in circles, and "remembered" striking on her ear because the airplane's wing had struck the ground.

Further work confirmed this amazing clarification of her amnesia. She later recalled with great difficulty passing through a certain town just before she came to the bridge. She remembered that she had been there before. A man she had not previously mentioned in the analysis lived there. She had wanted to telephone him and had stopped off to look up his number. Years previously she had spent several weekends with him. Yet, in contrast to her relations with other men during this period of her life, they never had sexual intercourse ("He was very brotherly!"). A few days after her attempted suicide he had visited her. After his departure she immediately seduced the constant attention of a man living in the hospital, and during this same period developed the obsession that the only way she could resume life among other people would be to become a gangster's woman. These phantasies were associated with a Victory Parade she had witnessed shortly after hearing of her brother's death. She had been watching army airplanes flying overhead; they had recalled her brother, and she was suddenly seized by a feeling of overpowering "lewdness." This experience had led directly to her seeking defloration and a period of sexual promiscuity.

This material showed that the place of the suicidal attempt had been determined by its being the home of a man who had awakened tender conscious feelings she had had for her brother, and the corresponding inhibition of erotic behavior. His reappearance at the hospital had aroused the repressed sexual love for her brother,

which was expressed in seductive behavior and phantasies which duplicated those stimulated years before by the airplanes at the Victory Parade. Her suicide phantasies and the behavior which they mobilized were therefore created by her unconscious identification with him, while the site of the attempt was dictated by her repressed desire to seduce him.

This material shows those wishes whose gratification she had sought in suicide and behavior associated with it. But to understand why a wish which could only be gratified by death could dominate her, and how real values and her customary life were suddenly renounced, required an analysis of a critical frustration of her love of women. The patient had had several homosexual love affairs during her adult life. Several years before her first suicidal attempt with allonal, she had become convinced that her hopes for marriage were thwarted, and she had established an overt homosexual relationship with an older woman whom she had later hated. The strongly domineering, possessive and pleasure-denying reactions of this woman provoked constant turmoil and misery for the patient. Her obnoxious traits reminded the patient of the dominating and ascetic personality of both her mother and her older sister and reawakened an intense lifelong resentment for them. The patient could not break off this ambivalent relationship, however, until a younger woman had enticed her and become her partisan against the older woman. Her first attempt to commit suicide by allonal poisoning had been exploited to bind this younger woman and make her an ally against the dominating mother-surrogate. In this way the patient had unconsciously repeated the seduction of her younger sister to an alliance against their mother; this had been an important phase of her adjustment to the emotional problems of her childhood.

Between the first and second suicidal attempts, the patient had rejected the older woman and carried on a love affair with the younger. This sister-surrogate was fun-loving and had men as well as women friends. Her intimacy with the patient was assured by a sort of mutually unconscious make-believe, the sister-surrogate pretending that she was dominant and emotionally dependent on no one, the patient that she was very submissive. Actually the

patient controlled the other's choice of apartment, her clothes, recreations, and intellectual pursuits.

For several months preceding the second suicidal attempt, the patient's happiness in this adjustment had been disturbed by fear lest the older woman she had rejected would retaliate by seduction of the sister-surrogate. On the evening before the drive to the bridge, she had seen her "beloved" speaking to this other woman. She had spent that night frenzied with jealousy and hatred, and had phantasied that she was at the door of the older woman's apartment with a pistol in her hand, that when the door was opened she fired. By morning her homicidal phantasy had become a suicidal plan, and before beginning her drive in circles, she had first gone to the beloved's office building to assure herself that the two women were not together. The suicide had therefore been a reaction to her desire to kill the mother-surrogate who threatened to win the sister-surrogate's love.

But it was not only the sudden danger of losing the person of her beloved which precipitated the catastrophe. What she feared still more was the loss of an experience which she had idealized to a superlative degree, and thought of as a "perfect love," the "most precious" experience which life could bring. This ecstatic evaluation of her love affair had developed from erotic experiences in which their usual emotional relationship was reversed; the beloved was then consciously thought of as a dominant man, and unconsciously as both father and brother. The core of these phantasies was that the patient would bear the beloved woman a child. Conceived mutually in their sensual relationships, the phantasy was greatly elaborated at times in their conversations. Thus the patient had attained happiness by the creation of an essentially delusional system of ideas and experiences. There is no evidence that reality-testing of these delusions was ever lost for more than brief and orgiastic periods, yet their vital emotional importance so far transcended their real values as to constitute an unquestionable though limited psychosis which had not affected her every-day activities. The "perfect experience" was therefore based upon a delusion which the mother-surrogate threatened to destroy. The patient was not merely jealous lest she lose a love-partner; she was

also unable to cope with the loss of a psychotically created happiness.

Yet there was a still more fundamental determinant of her crisis. At a deeper and even more significant level, the younger woman represented the patient's narcissistic phantasies of herself, both as woman and man. Once during analysis she stood naked before a mirror, phantasied her own image was the beloved's body and adored both its "soft feminine curves" and its "hard boy-like muscles." The patient's associations were that she loved the other's unacknowledged baby-like dependence, her attractiveness to men, her more beautiful breasts; but she also admired her beloved's muscular skill and athletic prowess, and imagined the other girl was a man in their sensual relationships. The patient later dreamed: *I was at a window looking out at a garden; I then came down to the garden and sang up to the window.* Her associations were that the window was that of her beloved's apartment; she actually selected this apartment for the other because of her own phantasy of herself reclining at this window, looking out and enjoying a sensual feeling while she grasped the branches of a tree and drew them in the window. The singer in the dream was associated especially with an experience at the opera when she had visualized her favorite soprano's notes getting larger and larger and higher and higher as they came across the auditorium to her and she had become very excited. The latent content of the dream is therefore similar to her waking phantasies when naked before the mirror; in her beloved's room she can pull the phallus into her and then be like the singer and exhibit a phallically conceived voice before the window herself.

The beloved had become, therefore, not only a baby-sister, a comrade, a sexual partner, and a substitute for a man, but the focus of *all* her libidinal needs. In the reality relationship, the beloved had cooperated to defeat the mother and to take the place of the little sister as that little one whose life and conduct the patient controlled and whose games she shared. In the psychotic relationship, the beloved gratified her incestuous desire and seemed father of her children; and she was also the projection of her own bisexual narcissism. What she most wanted to be herself, feminine women and masculine exhibitist, she expressed in the symbols of

her dream; these wishes she had projected on the body of her beloved in her mirror phantasies. But the realization of these dominant motives in her love affair had been threatened by the crucial rivalry of the mother-surrogate. The same unconscious phantasies had dominated her return to the man she loved like a brother but rejected sexually, and her identification with the brother by the suicidal attempt.

These were the most powerful motivations of the suicidal act. But associations showed it was at the same time a fulfillment of subsidiary desires. Thus many verbal similarities between her account of "rolling" (not jumping) off the bridge and her description of erotic relations with the beloved disclosed that this relation was also symbolically reestablished. The phantasy of burying herself was associated with lying in water and phantasies of a tender mother. The desire to die like the brother was the consequence of both her love of him and her antagonism. Penis-envy was most intense in her feelings for the hero. It was also shown in such strongly emotionalized phantasies as "my five fingers are like naked boys urinating," "when I am completely happy I like to leap and feel like a penis," and in her contempt for her lovers and her fear of "male conceit." As was shown by her conscious attitude toward what was known of the brother's sexual abstinence and her troubled queries as to why he originally went to France, it was only in his death that he adequately proved his virility to her full satisfaction, and at the same time his power to defy the mother's will. It was therefore only by identification with this act that she was enabled to achieve his phallic omnipotence; but this desire was a full negation of the unusually severe taboos imposed on both by their mother, and so satisfied the infantile need to be stronger than she was. The phallic identification with the brother, as well as the phantasy of possessing her mother's baby and being surrounded by water, are therefore all different means of total mastery of the mother. So the phantasies determining her suicide are also intimately related to her homicidal phantasy of pointing a revolver at the mother-surrogate and shooting; it was a different means of achieving this same goal. The revolver was associated with a penis, and the patient formerly, during the homosexual relationship, deeply resented the mother-surrogate's insistence that the pa-

tient, when masturbating her, pretend that the older woman had a penis. In the homicidal phantasy of shooting her, this reality relationship is reversed; and in the phantasy of dying like the brother her own possession of phallic omnipotence and defeat of the mother are at last attained.

Discussion

These fragments of an analysis enable us to understand how this individual failed to find adequate instinctual gratification in normal adult living; the emotional crisis which made her final homosexual adjustment futile and suicide the only release of her tension; and the specific meaning which this suicide had for her. The material is also relevant to important general problems of the theory of psychosis.

Every serious suicidal attempt gives rise to the inevitable question: whatever the rational grounds for escape from life may be, and however pleasant the wishes represented by a mere phantasy of suicide, how is it that the drive to accomplish it can actually supersede the primitive instinct of self-preservation? Our material shows that in this case these extraordinary conditions arose when the only solution to emotional frustration was an act which fulfilled the wish to identify herself with a person who had died. Zilboorg[1] has also reported patients whose suicides repeated psychologically the death of love-objects—in his cases, people who had died during the childhood of the individuals.

But this patient did not wish to identify with a dead brother; she wished to identify herself with him in the act of dying, and that is a very different thing psychologically from the fact of death. Thus she identified with him at the most heroic, virile, and mother-defeating, as well as death-dealing moment of his life. This fact is of special interest in the light of Felix Deutsch's[2] publication of clinical evidence that happiness while dying from organic diseases ("euthanasia") is also in some cases achieved through identification with the previous dying of a love-object. It seems, therefore, that a sufficiently intense drive which can only be gratified by repeating oneself in phantasy the dying of a loved person, may, as in this case, motivate an act which violates one's desire to live; while Deutsch has shown that the inevitability of death from a cause

which is not mental may reverse this process, resulting in euphoria and the investiture of the psyche with identification phantasies.* The self-preservative function is consequently abolished when the meaning of the suicidal act is supplanted by its libidinal meaning. In this case the libidinal meaning is the desire to be as the other person was when he was dying.

Still more instructive is the clear differentiation of the suicidal mechanism of this basically schizophrenic† patient and that of suicides which occur during depressions. Yet in two respects the mechanisms are similar. The precipitating cause, like that of most depressions, is the threatened or actual loss of an ambivalently loved object—in this case, the sister-surrogate. And the sequence of frustrated aggression against the mother-surrogate and the attempt to destroy herself is as clear in this case as in analyzed cases of depression.

But there is no evidence that this patient had identified with the lost object herself, as occurs in typical depression; on the contrary, her identification with the brother-surrogate dominates the picture. In depression, moreover, the effort to die is the consequence of an identification, while here identification is the purpose (the *goal*) of dying, that goal which satisfies all impulses, libidinal and destructive.

Furthermore, she does not, as analyzed cases of depression do, disclose phantasies which may be literally interpreted as a need to punish herself for her aggression. The writer does not favor such a metapsychological assumption here, because it confuses the clear differentiation of schizophrenic and melancholic mechanisms. It implies that the effective drives to destroy oneself in such a case are organized through identification with external authorities in the service of the moral functions. Nor does the writer favor it on empirical grounds because it confuses the guilt mechanisms involved in the frustrations of the patient's normal wishes—to be loved by mother, sister, and brother, and to have a sexual partner

**The reversibility of this mechanism resembles that described by Freud[3] in his discussion of pain: organic pain focuses the libido on the organ, while focusing of libido on an organ in hypochondriasis creates pain. Similarly dying may give rise to euthanasic identification with an object, or the need to identify may create the phantasy of dying.

†The patient was not in all respects a typical schizophrenic. Reality-testing was not permanently abolished, but it had lost its affective values and regulatory function in the phantasies of being pregnant by the sister-surrogate. Further, her behavior and thought-content during the six months following the suicidal attempt and during portions of the analysis resembled schizophrenia far more closely than other categories of psychosis.

and children, with the mechanism of the psychosis itself. There was indeed abundant clinical evidence of guilt associated with her normal sexual phantasies, a very unusual degree of shame for masturbatory impulses and the sexual knowledge of her childhood, her love for the brother-surrogate, and a great deal of fear of moral condemnation by others because she attempted suicide. All these facts definitely indicate a guilt mechanism while she was functioning in a nonpsychotic way. But there was no direct evidence of guilt immediately associated with her wishes to kill the mother-surrogate or to kill herself during the period of psychosis. In contrast to the domination of the ego by the superego, which Freud[4] and Abraham[5] recognized in melancholia, this suicide is a consequence of the domination of the ego by instinctual forces which are organized only to the extent of dictating the specific form of phantasy which is gratified by the suicidal act.

The mechanism is not 'I *deserve* to die for my aggression,' as in depression, but 'I *want* to die in this particular way to escape it.'*

I have elsewhere emphasized my opinion that a failure to complete essential identifications during early development is responsible for the inadequacies of the ego which predispose to schizophrenic and schizoid adjustments.[9, 10] The absence in psychoanalytic discussion of a clear differentiation between an unconscious need to identify and the characterological consequences of an identification which has been completed is, I think, responsible for the erroneous impression that it is especially in schizoid types of personality that identifications predominate.[11] Schizoid people when emotional strive to identify because they feel inadequate; but their inadequacy is largely a consequence of incomplete identification with others during this development. That a tendency of this patient to identify with her brother had been active since early childhood is indeed shown in many ways. She had even completed identifications with some of his superficial traits (ideals, baseball playing, selection of clothes, group leadership) so that childhood activities of the brother had been continued in her own personality as valu-

*In this I differ from the views of some authorities, for example, Karl Menninger (6). Although in many important respects I agree with this author's interpretation of his material, I do not agree that there is psychological material to justify his opinion that self-punishment is a determinant of every self-destructive act, including suicide and psychotic phenomena in general. This seems to me to imply that self-destructiveness is self-punishment by definition, and means that one is using the concept of self-punishment as a redundant synonym for the death-instinct. Compare also Franz Alexander (7), and Herman Nünberg (8).

able pleasure-giving sublimations. But anything approaching an identification contributing to her basic character organization had not occurred. She had not a masculine character. Her brother was still the object of her heterosexual love as well as her homosexual wish to be like him. The news of his death made her heterosexually promiscuous. On the suicidal day she again sought his surrogate. In contrast to a suicide during depressions, therefore, the suicidal act of this patient is the fulfillment and not the consequence of the identification. And so, in this special case of a wish to identify completely with a person in the act of dying, I think that one may venture a paradoxical truth by saying that the patient attempted to cure the psychosis by dying. When such a cure failed, her subsequent relationships to her total environment became predominantly schizophrenic for the first time in her life.

Summary

To recapitulate: The patient's early efforts for satisfying object-relationships during infancy were thwarted in several directions: her love of the father by his impotent character; her love of the mother by the mother's sadistic morality and the birth of her younger sister. During childhood, these problems were incompletely solved by emotional partnership with her younger sister against the mother, and by her constant play with a group of children led by her brother, whom she adored and imitated in tomboy play. These frustration patterns were repeated in her adult search for love. The incest taboo excluded her brother and all other men whom she admired, although the sexual aspects of her love of him determined her passionate conscious desire that he himself escape erotic inhibitions in France, and her compulsive promiscuity after his death. Her contemptuous reactions to the father, repeated in her feeling for men with whom she had sexual affairs, made marriage impossible. In consequence she sought a tolerable love in homosexuality and repeated her intense ambivalent feelings for her mother in her relationship with the older woman. Her final adjustment originated in a repetition of her love for the baby-sister and alliance with her. This served as an escape from the mother-surrogate, as a gratification of her need to dominate, and as a sensual fulfillment. But the relationship did not fully satisfy her emotional

needs until it was supplemented by the delusion that she would become pregnant. The threat of being deprived of this "perfect love" (that is, psychotic love) mobilized all her aggression, and she regressed to the most adequate, although unconscious, object-relationship of her life, her erotic and idealized love of her brother. As she had done in her childhood play, she again attempted to master her aggression against the rest of the world by identifying with him. As he was perfect as a male only in his dying act, it was the symbolic reproduction of this act which represented phallic omnipotence and mastery of the mother, and thus became the immediate goal of all her instincts. This suicidal attempt, in contrast to depressive suicides, represents a different escape from aggression, libidinal frustration, and anxiety, rather than an act of self-punishment. It is not a consequence of identification, but an effort to fulfill the need to solve this terrible crisis in the patient's life by achieving an identification with the act of a hero.

The patient terminated her psychoanalytic treatment after six months, against advice; her understanding of the analytic experience was excellent and she gave as her chief reason for termination her fear of emotional dependence. A year later she resumed normal vocational life, and subsequently married a lifelong friend for whom she had had a romantic attachment since youth, but whose cultural inferiority had previously seemed to her a decisive obstacle to marriage. No information about her marital adjustment is available.

205 Beacon Street
Boston, Mass.

REFERENCES

1. Zilboorg, Gregory: Considerations on suicide, with particular reference to that of the young. Amer. Jour. Orthopsy., Vol. V, 22, 1937.
2. Deutsch, Felix: Enthanasia: A clinical study. Psan. Quart., Vol. V, 347, 1936.
3. Freud, Sigmund: On Narcissism. Translated in Collected Papers, Vol. IV. Hogarth Press and the Inst. of Psychoanalysis, London, 1925.
4. Freud, Sigmund: Mourning and melancholia. Ibid, Vol. IV, 1914.
5. Abraham, Karl: A Short Study of the Development of the Libido. 1924. Translated in Selected Papers. Hogarth Press and the Inst. of Psychoanalysis, London, 1927.
6. Menninger, Karl: Man Against Himself. Harcourt, Brace and Company, New York, 1938.
7. Alexander, Franz: Remarks About the Relation of Inferiority Feelings to Guilt Feelings.
8. Nünberg, Herman: The feeling of guilt. Psan. Quart., Vol. III, 589, 1934.
9. Hendrick, Ives: Contributions of psychoanalysis to the study of psychosis. Jour. A. M. A., Vol. 113, 918, 1939.
10. Hendrick, Ives: Ego development and certain character neuroses. Psan. Quart., Vol. V, 320, 1936.
11. ——: Ibid. Footnote, page 326.

THE EFFECT OF METRAZOL INJECTIONS ON THE ELECTROENCEPHALOGRAM*†

BY HANS STRAUSS, M. D., AND WALTER E. RAHM, JR., B. A.

Electroencephalography has yielded especially interesting results in the field of epilepsy.[1, 2, 4, 5, 6, 7, 10, 11] The discovery of characteristic electrical patterns for petit mal seizures and the description of so-called larval seizures has given rise to the hope of a better understanding of the epileptic mechanism in general. Other studies have furnished similar results in grand mal. These results, however, are more difficult to evaluate. During the grand mal attack electrical potentials generated by the muscles and also by gross movement of the electrodes are superimposed upon the electroencephalogram. In order to segregate the actual brain potentials it is necessary to study first the electrical characteristics of the accompanying muscle actions and the gross movements. The opportunity to study these various factors in a well-defined and readily-controlled type of epileptic attack is afforded in the metrazol seizure. In a previous paper[13, 14] the metrazol convulsion was described with regard to gross movements and muscle action potentials. The present series of observations deals with a study of the metrazol seizure and its effect upon brain potentials in the light of our previous studies.

Technique

The electroencephalogram (EEG) and the electromyogram (EMG) were recorded by means of suitable resistance capacity coupled amplifiers and dynamic ink writers. The time constant of the amplifiers was 0.5 second. The frequency response was uniform from 2 to 45 cycles. The present study, using nine schizophrenic patients, covers 40 injections and 26 overt attacks.

Results

During the *latent period* which immediately follows the metrazol injection the EMG shows a uniformly low potential activity. The EEG with bipolar motor-occipital leads (Fig. 1) shows gen-

*From the department of psychiatry, New York State Psychiatric Institute and Hospital, New York City.

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erally normal alpha activity with however, the occasional appearance of 3 to 5 cycle and 15 cycle per second activity. Bipolar right and left motor leads show constant activity of approximately 30 cycles per second. Bipolar right and left occipital leads show constant alpha activity.

During the *first clonic* stage, the onset of which terminates the latent period, there is a very close similarity between the EMG and the potentials recorded from the head. However, the bipolar right and left motor leads show a continuous activity of 30 cycles per second, superimposed on the large slow waves which correspond to gross physical movement.

During the *tonic stage,* which immediately follows the first clonic stage, bipolar motor leads show constant 30-cycle-per-second activity, which is likewise found in the EMG. Bipolar motor-occipital leads and bipolar occipital leads often show a normal alpha rhythm, despite the appearance of muscle and movement artefacts.

The *second clonic stage* follows the tonic stage without sharp demarcation. There is a close similarity between the EMG and the potentials recorded from the head, both of them showing waves of gradually decreasing frequency and corresponding to gross movements. In addition the EMG shows much 30-cycle-per-second activity. In all the leads from the head (bipolar motor-occipital, bipolar motor, bipolar occipital motor-indifferent) 30-cycle-per-second waves may appear superimposed to the large slow potentials. These fast potentials are simultaneous in the different leads, and are most pronounced in the bipolar motor and motor-indifferent leads.

The *relaxation period* which immediately follows the cessation of all movement is characterized by low-voltage random potentials in all the leads.

During the following recovery period (Fig. 2), which always lasts more than 45 minutes, the brain potentials gradually return to normal. The early recovery period during which the patient is drowsy but not sleeping shows predominating activity of 2 to 4 cycles per second and some of 6-cycle-per-second potentials. As the recovery period progresses the 6-cycle-per-second potentials become predominant over the 2 to 4 cycle-per-second potentials. Finally this 6-cycle-per-second activity gives way to normal EEG activity.

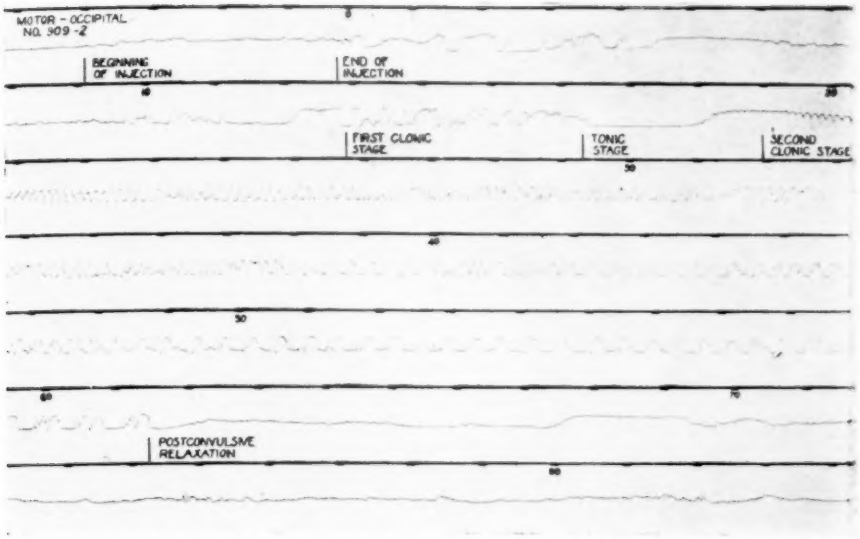

Fig. 1. Brain potentials (with a bipolar motor-occipital lead) during an overt metrazol induced convulsion. (Record is continuous.)

Fig. 2. Brain potentials at intervals following an overt metrazol seizure

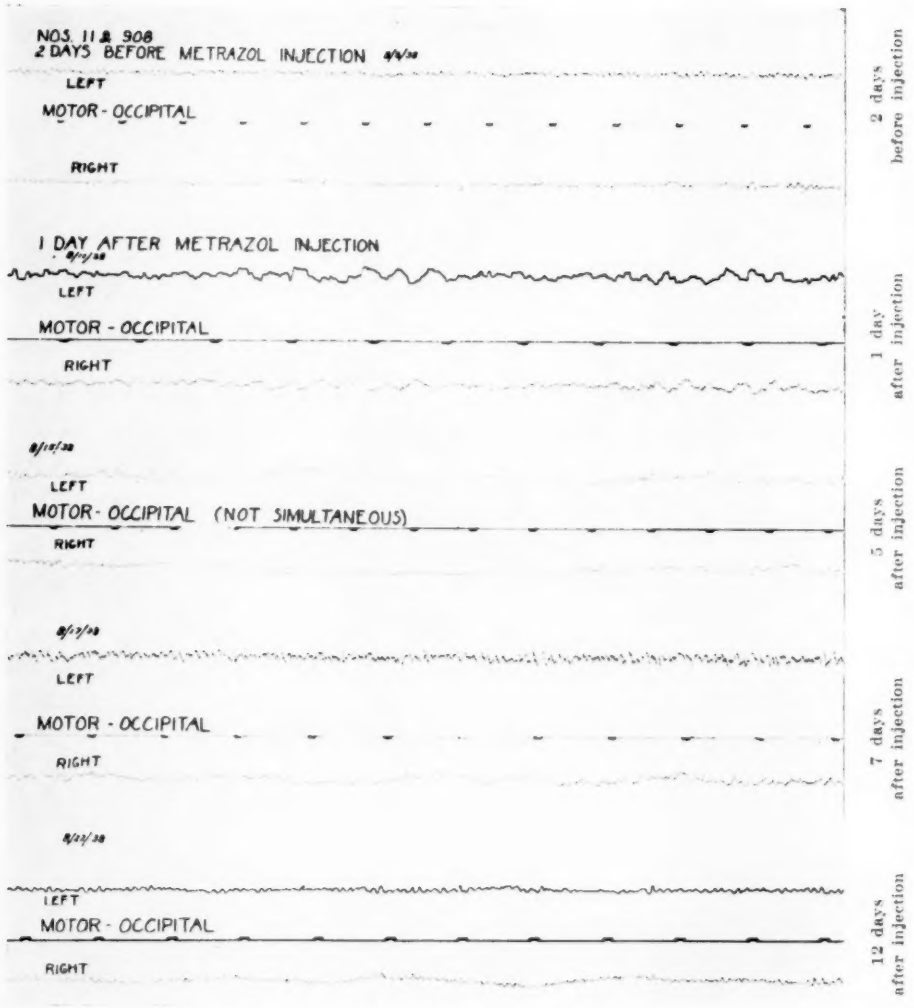

Fig. 3. Prolonged sequelae of metrazol injection

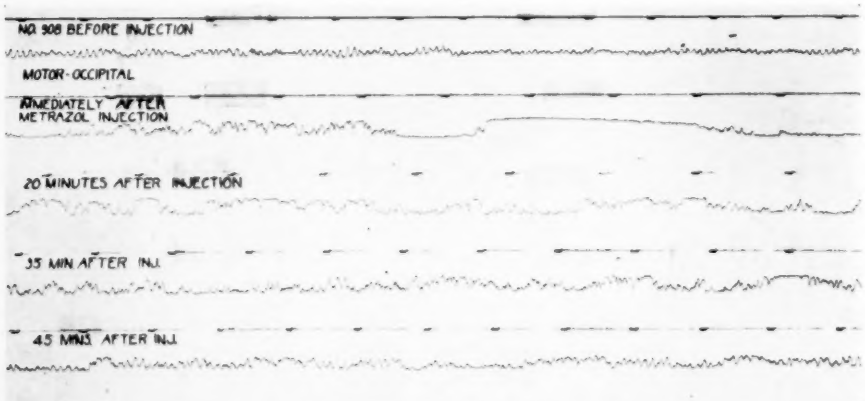

Fig. 4. Brain potentials (with a motor-occipital lead) at various intervals following a metrazol injection with no overt convulsive sequelae

In three cases the metrazol seizure caused a *prolonged clinical reaction* characterized by clouded consciousness with disorientation. This reaction was followed by a period in which the patient complained of dizziness and of pressure on the head. During all this time, which lasted in one patient as long as seven days, the EEG was abnormal (Fig. 3), showing at first an almost continuous activity of 3 cycles per second. The EEG gradually returned to normal concomitant with the improvement in clinical status. From these findings the need for electroencephalographic control of metrazol therapy seems to be indicated especially in the case of inaccessible patients.

Not infrequently the metrazol injection fails to provoke a seizure. However, these *subconvulsive doses* may produce definite changes in the EEG. The simplest type of reaction in which the patient did not complain of any subjective symptoms, was a reduction in the percent-time alpha with a return to normal within a minute.

A second type of reaction (Fig. 4) may be characterized by the appearance of many 3- and 6-cycle-per-second potentials. Recovery from these abnormal potentials and the accompanying confusion, nausea and dizziness took always more than 45 minutes.

A third type of reaction is characterized by the appearance of serial rhythmic potentials of 3 and 6 cycles per second. This so-termed larval seizure is followed by a relatively rapid return to normal within 15 minutes.

Discussion

In a previous paper on the effects of metrazol on the EEG Cook and Walter[3] made no attempt to differentiate potentials arising in the muscles and gross movement, from actual brain potentials during the overt attack. By combining the results obtained from our studies of the EMG, EEG and high speed cinematographic findings we feel it is possible to attempt such a differentiation. During all stages of the metrazol seizure with the exception of the relaxation period, 30-cycle-per-second potentials appear in the bipolar motor leads. While it may be assumed that during the convulsive stages this 30-cycle-per-second activity may have its origin in the muscles we feel that this hypothesis is untenable because: (a) these poten-

tials often appear in the latent period without the concomitant appearance of such potentials in the EMG, and (b) because in all stages these potentials are of large amplitude in the motor region. This local presence of the 30-cycle-per-second activity and the absence of extensive muscle tissue in the motor region leads us to feel that these potentials may be considered true cortical potentials. Despite the fact that many large muscles terminate close to the occipital region, this area shows alpha activity even in the tonic stage.

However, we can see no satisfactory way of demonstrating that the large slow potentials corresponding precisely to gross physical movement are cortical in nature, although Jasper and Andrews[3] have demonstrated the possibility of a synchronization of brain potentials and gross movements under certain conditions (tremor). It is interesting to note in this regard that brain potentials in animals which have been immobilized with curare and then injected with metrazol[8] show no gradual slowing down in frequency such as is revealed in the large slow potentials in the human, concomitant with the slowing of the gross physical movements in the second clonic stage. This we feel would give further support to our opinion that these potentials do not arise from the cortex but rather from gross movements of the electrodes.

After the elimination of all potentials which we feel are artefacts we find that there is little change in cortical activity throughout the whole second clonic stage. The slowing down of gross physical movements with no accompanying change in the cortical brain potentials would seem to indicate that the subcortical centers exert an important effect upon the regulation of these physical movements. For further clarification of this point the study of subcortical potentials in experimentally-produced seizures would be desirable.

We have found that when the metrazol injection is followed by a larval seizure the EEG returns to normal much more rapidly than in either the case of an overt seizure or of the appearance of random, abnormal potentials. This observation seems to be of some importance in the understanding and treatment of epilepsy in general. We know from clinical observations that many epileptic patients experience malaise for some time before an attack, and that

the attack eventually brings about the disappearance of their premonitory symptoms such as irritability, headache, and dizziness. On the other hand, the overt epileptic seizure entails many dangers and seriously disturbs the activity of the brain for some time following the seizure, as seen in our study of the EEG. The larval seizure, in contrast, does away with the pathological activity in a harmless way and allows the brain activity to return to normal in a much shorter time. This might indicate that in cases of epilepsy one should try to achieve a control of the epileptic events that will allow the occurrence of larval seizures instead of suppressing all epileptic discharges completely. This should be tried at least in cases where the complete suppression causes the appearance of disagreeable symptoms. Theoretically the difference in the sequelae of an overt and a larval seizure means that both achieve an abolition of the epileptic "charge" but that the overt attack, in addition to this helpful result, itself causes new damage to the brain.

We had hoped originally that the reaction of the EEG to the metrazol injection might give some indication of a possible individual convulsive threshold. However this was not the case, for even in the same individual there was a marked independence between metrazol dosage and the consequent EEG and clinical result.

Summary

1. The electrical potentials arising from the head after metrazol injection have been recorded. On the basis of a comparison of the potentials recorded from leads taken at various locations on the head, with electromyograms and with the movements as shown by ultra-highspeed motion pictures, an attempt has been made to separate the brain potentials from potentials caused by movement and muscle action currents.

2. The overt seizure shows in all stages, from the latent period to the end of the second clonic stage, an activity of 30 cycles per second in the motor region. An activity of 10 cycles per second was recorded from occipital leads during the latent period and the tonic stage. Motor-occipital leads recorded in the latent period showed some activity of 15 to 16 and 3 to 5 cycles per second.

3. The relaxation period shows low-voltage random activity.

4. If no seizure follows the metrazol injection the following changes in the EEG may occur:

a. Drop in percent-time alpha without appearance of abnormal potentials and return to normal activity within a minute.

b. Appearance of random abnormal potentials with a slow return to normal activity after more than 45 minutes.

c. Larval seizure after which the activity returns to normal in less than 15 minutes. The importance of this type of reaction to the theory of epilepsy has been discussed.

REFERENCES

1. Berger, H. Über das Elektrenkephalogramm des Menschen, IV. Mitteilung, Arch. f. Psychiat. u. Nervenkrankheiten, 97, 6-26, 1932.
2. Berger, H. Über das Elektrenkephalogramm des Menschen, XIV. Mittlung, Arch. f. Psychiat. u. Nervenkrankheiten, 108, 407-431, 1938.
3. Cook, L. C., and Walter, W. G.: The electroencephalogram in convulsions induced by cardiazol. J. Neurol. Psychiat., 1, 180-186, 1938.
4. Gibbs, F. A., Gibbs, E. L., and Lennox, W. G. Epilepsy: A paroxysmal cerebral dysrhythmia. Brain, 60, 377-388, 1937.
5. Gibbs, F. A., Gibbs, E. L., and Lennox, W. G.: Cerebral dysrhythmias of epilepsy. Arch. Neurol. Psychiat., 39, 298-314, 1938.
6. Gibbs, F. A., Lennox, W. G., and Gibbs, E. L.: The electroencephalogram in diagnosis and in localization of epileptic seizures. Arch. Neurol. Psychiat., 36, 1225-1235, 1936.
7. Gibbs, F. A., Davis, H., and Lennox, W. G.: The electroencephalogram in epilepsy and conditions of impaired consciousness. Arch. Neurol. Psychiat., 34, 1133-1148, 1935.
8. Hall, G. E.: Physiological studies in experimental insulin and metrazol shock. Amer. J. Psychiat., 95, 553-566, 1938.
9. Jasper, H. H., an Andrews, H. L.: Brain potentials and voluntary muscle activity in man. J. of Neurophysiol., 1, 87-99, 1938.
10. Jasper, H. H., and Hawke, W. A.: Electroencephalography IV. Localization of seizure waves in epilepsy. Arch. Neurol. Psychiat., 39, 885-902, 1938.
11. Kornmüller, A. E.: Der Mechanismus des epileptischen Anfalls auf Grund biolektrischer Erscheinungen am Zentralnervensystem. Fortschritte d. Neurol. and Psych., 7, 391-400, 414-432, 1935.
12. Rahm, W. E., Jr., and Williams, A. C., Jr.: Aspects of the electroencephalogram in epilepsy and feeblemindedness. PSYCHIAT. QUART., 41, 230-235, 1938.
13. Strauss, H., and Landis, C.: Metrazol convulsions and their relations to the epileptic attack. Proc. Soc. Exp. Biol. Med., 38, 369-370, 1938.
14. Strauss, H., Landis, C., and Hunt, W. A.: The metrazol seizure and its significance for the pathophysiology of epileptic attack. J. Nerv. and Ment. Dis., 90:439-452, 1939.

PSYCHOPATHIC STATES WITH PSYCHOTIC REACTIONS*

BY JULIUS L. NELSON, M. D., C. M. AND JOSEPH ZIMMERMAN, A. B., M. D.

This paper was undertaken with the view to finding some common traits, some common denominator in that loosely-defined and poorly-grouped mental maladjustment known as psychopathic states. Toward that end, we attempted to survey as many cases as possible that were so diagnosed. A few cases were omitted because there were so few statistical data that they were practically useless; however, that number was small. All our cases under consideration were diagnosed psychopathic personality with an episode, either unanimously or else by prevailing opinion. None of the cases include the behavior disorders following encephalitis. While alcohol was a precipitating factor in some of our cases, causing admission to the hospital, in none was it a determining factor in the psychotic episode. In all of our cases the opinion was arrived at after a careful study of the personality makeup and the particular psychotic reaction. Generally, the diagnosis was made with greater care and caution than usual. This is due to the fact that in a State hospital we look for better defined and more clear-cut types of psychotic reactions. We are generally disinclined to make a diagnosis of psychopathic personality unless the history of the personality makeup is characteristic and the psychotic reaction atypical. Hence, the diagnosis was arrived at upon the study of patient's personality makeup and his psychotic reaction, which was usually of short duration, and in many other ways, was atypical of the well-recognized psychotic reactions.

We have selected 220 cases which include the first admissions as far back as 1928. After reviewing a number of charts, it became evident that our types of psychopaths in certain ways differed from those described in the literature. For instance, the antisocial behavior in childhood of one of our patients culminated in criminal activities in adolescence. After serving a prison sentence, he went into a state of prolonged depression before coming to the hospital. The inadequacy shown by other patients in adapting themselves to the demands of the home and the community, was much more

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severe and warranted hospital care. However, certain more or less distinct types of behavior disorder became evident. Some patients showed definite manifestations of antisocial attitude even in early childhood. Others showed passively an inability to adapt themselves to the standards and demands of the home and the community. The former we grouped as the delinquent, the latter as the inadequate type. However, there was a much larger middle group, which was less distinct. While it showed some of the traits of the two primary types, it did not present a distinct tendency. Since we were looking for common traits, the most universal characteristic of this group was its emotional instability. Therefore we labeled it the emotionally unstable type.

It is felt that the grouping, based upon social adaptability, serves a better purpose than a description of the personality such as paranoid, sthenic, cycloid, et cetera. Our grouping, therefore, was primarily from the point of view of the individual's relationship to society. There his difficulties were either of a continuous disregard for social standards, or of his inability to assume the average amount of responsibility in the community. The remaining group, while not showing any continuous disregard for society, were capable of assuming some responsibility, although they could do so only for short periods. Patients of this type are unsteady in their pursuits, incapable of sustained effort, and have no definite direction or goal. Further, their difficulties in adapting themselves may be manifested in oversensitivity, suspiciousness, quarrelsomeness and abusiveness.

Case Material

Delinquent type

Representative of the delinquent type is W. J., who was 28 years old when he came to the hospital in December, 1935. He was the sixth of seven siblings. Both parents were living and of middle-class standing, and except for one brother who had committed suicide, there was no mental nor nervous disease in the family. The patient had a normal birth and infancy, and had had the usual childhood diseases. Soon after he entered school, he began to show definite difficulties in adjusting himself, played hookey, did not want to study and did not attain the seventh grade until the age of 17 years. He was transferred from a public to a parochial school

because of his difficulties. At 8 years he began to steal at home. He would search through the pockets of the different members of the family and take whatever he could. At 12 years he was arrested for the possession of a revolver—he had been shooting at car tires. No one could find out where he got the revolver. He was discharged by the court to the custody of the father. Subsequently he stole pennies from the newsstands, and from his father's back yard eggs which he sold to neighbors. At 14 he obtained a revolver, again from an unknown source, and shot himself accidentally, with no serious consequence. At 15 he was arrested for speeding and for driving a car without a license. Through the father's influence, the case was dismissed. He constantly fought with the boys at school and had no friends. At one time he struck the principal of the school and was expelled. He stayed out of school for two years.

At 17 his first job was with a wallet manufacturing concern. After two months, he was discharged for stealing from the company. At 18 he went to Florida with his father and there got into difficulties for stealing articles from the boats on which he was working. He later found some work with a coffee concern, where he earned $30 a week. After two years, he was discharged for stealing coupons from this concern. Later with the aid of a relative he was given a position as clerk in a large banking concern, earning $160 monthly. Here for a while he was well liked and he advanced rapidly, during a four-year period. Then he began to sell the cars belonging to the bank employees. Because of this and his indulgence in alcohol, he lost his position at the bank. About this time he had a quarrel with his father, assaulted him and broke his ribs. After this, he was ordered from the house. Two years prior to admission, he impregnated two maids in his father's employ. The family "took care of it." About 14 months later, he again impregnated two other women, one of whom compelled him to marry her. It was estimated that the patient's difficulties with women, his thefts, lawyers' fees and damages cost the family between $17,000 and $18,000. Soon after this forced marriage, he was arrested for holding up a woman on the street. The plaintiff, as usual, was "bought off," and the case never came to trial. In spite of the fact that his father established a home for him and his wife, he continued with petty larceny. Impersonating his brother-in-law,

who was a physician, he went to various homes, examined and treated individuals for recompense. He forged checks and continued to sell cars that did not belong to him. In February of that year he impersonated a police officer and frightened housewives into paying him extortion money. Four months prior to admission, he went to a house of prostitution, threatened the owner and got $25. It being soon discovered that he was not a police officer he was arrested for extortion. Again the family "bought off" the plaintiff and the case never came to trial. A few months before admission, the patient was taken in with his wife and child to his brother's home, where he continued to steal numerous articles, selling or pawning them. A short while before his admission to the hospital, he was given a job by the W. P. A. He cheated his fellow-workers, obtaining money from them on the false promise that he would give them free apartments. His marital relations, which were stormy, became more so shortly before his admission to the hospital. He assaulted his wife and in turn her family beat him severely. Following that the wife left him. He continued to drink, was picked up on the street and sent to the observation ward of the Kings County Hospital. He was taken home but soon afterward he again impersonated his brother-in-law as a physician, and again obtained money on false promises. However, the father made good the losses.

In makeup, he was described as clever, "could be very impressive and convincing," liked to spend money, got along well with his siblings except one sister, whom he resented because she tried to advise and correct him. He always resented his father's advice, insisting that he could take care of himself. The patient never had any close friends nor interest in books. He constantly promised to reform, but always returned to his antisocial habits. He was never interested in religion.

Following an argument at home, the patient became destructive and abusive, and the family, feeling that they had had enough of him, sent him to the observation ward of the Kings County Hospital, whence he was transferred to the Brooklyn State Hospital.

At the observation ward, he was described as self-contradictory, evasive, impulsive, emotionally unstable, and as showing pathologi-

cal exaggeration of past events. A few days following his admission to this institution, he was described as fairly well adjusted. He denied all of the antisocial activities ascribed to him and made a good adjustment at the hospital in a very short time. However, because of his previous difficulties, the family was not anxious for his release. After three months he was finally discharged as recovered.

While there is no doubt about this patient's characteristic antisocial tendencies and conduct, the majority of our cases grouped under the delinquent type were less typical. However, in the main, they all tended to disregard accepted standards of behavior.

Inadequate type

The next case we consider to be representative of the inadequate type. This may be questioned by some because of the fact that the patient has been confined to our hospital for so long. However, when the story is completed, there should be no question that while we are dealing with a chronic condition, we are not dealing with a malignant type or with schizophrenia—unless the term schizophrenia, which of late has been so loosely applied, has lost all meaning.

The case is that of G. W., who was admitted in 1916. He was then 35 years of age. His mother was a patient in a mental hospital where she finally died after a residence of undetermined length. The father was described as an alcoholic who deserted his family when the patient was in his childhood. There was one brother, who died at the age of 29 of tuberculosis, and he has two living sisters. The whole family was described as "extremely nervous" and referred to themselves as being of a "nervous makeup, unable to stand much."

The patient was born in Brooklyn, attended public school with no difficulties, in fact, was considered bright. At the age of 17, he is said to have suffered "a nervous upset," was compelled to give up work and did not return to his former position. During this time he is also said to have been apprehensive of heights, fearing that "he was going to jump off." The sight of sharp instruments frightened him lest he hurt himself and others. After some time he obtained work as a clerk with a large insurance company. He was

employed there for a number of years. Eventually he began to complain of some general weakness and aches and pains. It is stated that for the last 12 years before his admission, he constantly complained of chills and fever, and for 10 years prior to admission, did no work. He made his home with his sisters, first with one and then with the other. During this entire period, he was "nervous," his face would twitch and he would move his head from side to side. He became interested in Christian Science and attended the services regularly. He turned to different fads, such as diet, fresh air, et cetera, but to no avail. Following a minor fire that broke out in the apartment, the patient became frightened and his voice became hoarse. He constantly referred to the fact that he should support his mother and sisters, but always excused himself on the grounds of his disability. It was stated that he was engaged to a young woman for over 15 years and that he could not muster enough courage either to break the engagement or to undertake marriage. The patient became more retiring and seclusive, only spoke when spoken to, and generally assumed the life of a recluse.

When admitted to our hospital, he was undernourished, but otherwise there were no abnormal physical signs. Examination by competent neurologists did not reveal any neurological condition. There was no sensorial impairment. He had no delusions nor hallucinations and did not show any emotional or intellectual impairment. His condition was diagnosed as psychoneurosis. The patient has been confined to the hospital ever since his admission. He spends his time in his room keeping up to date with current events. He reads newspapers regularly and supplements them with periodicals and books. He listens regularly, and with great interest, to the radio news periods. He maintains complete contact with the outside world, although preferring to remain inside, cloistered as a hermit. He was reexamined on different occasions by competent neurologists and at no time was there any evidence of any physical or neurological condition. During his long residence at the hospital, he was examined by many psychiatrists and at no time was there any evidence of mental dissociation. Even at present, at 59 years of age, there is no evidence of mental deterioration. The patient's mental condition from the intellectual and emotional point of view, is exactly the same as on the day of his admission. He is

shy, timid, shows anxiety at the approach of the physician lest there be some alteration in his routine, but there is no regression nor any mental deterioration.

Addendum

From the facts cited above, it is evident that the patient has failed in adapting himself to the ordinary social and economic standards of the community. However, the question arises how he failed, what forms of difficulty he presented and what means he used in evading responsibility. Did he break from the world of reality with its socially accepted standards as the schizophrenic does, did he build a world of his own either on a delusional basis or else did he regress to a much earlier level of development? As stated previously, the patient at no time has shown any delusional ideas nor did he show any regression with its accompanying emotional and intellectual impairment or deterioration. In fact, the patient has maintained a very lively interest in the world of reality with its manifold activities, even though he himself could not take an active part in them. Thus it appears to the authors that we are not dealing here with a case of schizophrenia, this in spite of the very long confinement in the hospital.

The next and most important differentiation lies between psychoneurosis and the inadequacy of the psychopath. While the differentiation is not clear-cut because of the overlapping of symptoms, yet there are certain characteristic differences present in each group. The most diagnostic characteristic lies in the different attitude toward society and the striving to maintain a place in it. The psychoneurotic has no open strife with society, in fact, his difficulties arise because of too much respect for its conventions and precepts. He strives to maintain an equal membership in the community, even though he does it at a great expense to himself. He refuses to take a second place in his share of responsibility. Because of this, he has to resort to anxiety, phobic, obsessive and conversion symptoms in order to maintain his social pride. The inadequate type of psychopath, while he too has difficulties in assuming responsibility, at times may resort to psychoneurotic manifestations. His striving to maintain an equal footing in the community is definitely limited. His social pride is impaired, he is willing to

admit his failure, is willing to adapt himself on a very limited level and he is ready to receive help from any source from whence it may come. Because of this, he does not build up an elaborate system of justification, as the psychoneurotic does, for his inability to cope with the ordinary problems in life.

The patient under discussion did resort to psychoneurotic symptoms in his earlier years, but he subsequently gave them up. He assumed the role of the invalid, was willing to admit failure, gave up all responsibility and was willing to receive aid from his family. Even the mere living in the midst of a world of activity was too much for him. He therefore preferred to find a haven in a mental hospital with no responsibility of any kind.

While this may be an extreme case of inadequacy, we think there should be no doubt that it is a case of constitutional inferiority, which we have grouped as the inadequate type. True, not all cases show this marked inability to assume the ordinary responsibilities. However, they all show similar tendencies but differ only in degree and extent.

Emotionally unstable type

C. H. was 49 years old on admission. He came here in 1938. Little is known of his early life. He was married, marital relations were unhappy. The patient was a tailor and furrier by occupation. He was described as kind and generous on the outside, but demanding, irritable, excitable and argumentative at home. In 1930, arrested for forging a check, he served three months in a penitentiary. Since then he had many lawsuits brought for nonfulfillment of contracts. For the last six years his conduct at home had become unbearable. He was suspicious of everyone and thought his own family was against him. Four years ago he became excited, violent, threw a milk bottle at one of his daughters. Since then he had these upsets quite frequently, became abusive and assaultive toward the family. He attempted suicide twice but both attempts were frustrated. Immediately prior to his coming to the hospital he assaulted some members of the family and created a disturbance in the neighborhood. The family caused his arrest and from court he was sent to the observation ward, whence he was transferred here. Soon after his admission, the patient showed a

fairly good adjustment at the hospital. He denied any trouble on the outside or at home. He rationalized all his difficulties, insisted that he was always kind to everyone. He has not shown any emotional nor intellectual impairment nor any sensorial involvement. The patient, however, became very easily excited and the only abnormal mental trait was his emotional instability.

This case, as stated previously, is typical of its group. Although oversensitivity, argumentativeness, abusiveness and a paranoid reaction are present, it is felt that the emotional instability is by far the commonest trait present in all.

Statistical Analysis

The statistical study embraces 127 male and 93 female patients. Their ages range from 13 to 74. The average age for the entire group was 36.2, 38.0 for the males and 33.7 for the females. Admissions were most frequent in the third and fourth decades, least in the second and eighth.

Table 1. Age Distribution

Age, years—Number	Males	Females
Up to 15— 3	1	2
15 to 20—27	12	15
20 to 30—60	30	30
30 to 40—61	40	21
40 to 50—29	19	10
50 to 60—27	15	12
60 to 70— 9	6	3
Over 70— 4	4	0
Total..220	127	93

Difficulties appeared during childhood in 78, during adolescence in 54, during adult life in 76. Nine cases were unclassified.

Their education varied from a few grades of common school to college and professional schools. The majority fell below high school education.

Table 2

Extent of education	Male	Female	Total
Common school or less	99	62	161
High school or less	20	27	47
College	7	5	12

Their occupations varied from unskilled to the most highly skilled. Obviously the majority were unskilled. Of the entire group 128, or 66 per cent, were unsteadily employed or were of the "shiftless" type.

TABLE 3. OCCUPATION

	Male	Female	Total		Male	Female	Total
Skilled	64	33	97	Unskilled	62	34	96
Steady employment..	25	16	41	Steady employment..	13	11	24
Broken employment..	39	17	56	Broken employment.	49	23	72

Of our group, 77 were native of native-born parents, 87 native of foreign-born parents and 56 were foreign of foreign-born parents. Of those cases in which the number of siblings was known, it was found that 83 came from homes of two siblings or less and 92 came from homes with more than two siblings. Those who came from broken homes were 77 in number, 38 male and 39 female.

Terms descriptive of the personality makeup were most commonly noted as follows: emotionally unstable 48; subject to tantrums 33; abusive and argumentative 34; suspicious and irritable 42; suggestible and passive 49; egotistical 14.

TABLE 4

	Male	Female	Total
Suggestible and passive.....	29	20	49
Unstable	24	24	48
Suspicious and irritable	27	15	42
Abusive and argumentative	23	11	34
Subject to tantrums	17	16	33
Egotistical	10	4	14

Those who had a history of alcoholic indulgence were 80 in number, 57 males and 23 females. Those with drug addiction were 9, 3 males and 6 females. Sex offenders were 8 in number and were all males. These offenses ranged from exhibitionism to rape. Those with a history of alcohol showed a definite increased addiction with the repeal of prohibition and the frequency became most noticeable in the last few years.

TABLE 5. HISTORY OF ALCOHOL ADDICTION

Year	Male	Female	Total	Year	Male	Female	Total
1928	4	1	5	1934	1	0	1
1929	3	1	4	1935	4	3	7
1930	4	2	6	1936	13	5	18
1931	3	2	5	1937	8	3	11
1932	3	1	1	1938	12	5	17
1933	2	0	2				

Eighty-four of our patients had a record of arrests, 40 of these had single arrests. Others were arrested as many as 15 times. Arrests in 27 cases were for petty larceny and prostitution; the majority of the others were for disorderly conduct, usually for assault, intoxication or both.

In our group there were 28 with some serious physical disease or handicap:

11 had deformities varying from scoliosis to club foot
4 were "delicate" or of the invalid type
3 had pulmonary tuberculosis
10 had somatic syphilis

According to our grouping there were 50 of the delinquent, 116 of the emotionally unstable and 54 of the inadequate type. There were 17 women in the delinquent group. This group accounted for half the number of arrests even though it constituted less than 22 per cent of the entire number. In the inadequate type there were more women than men, 28 to 26. The majority of the delinquents came from the larger families and the majority of the inadequates from the smaller families.

The psychotic reactions were: 153 with episode of excitement, 67 with episode of depression. There were 39 episodes of excitement in the delinquent group and 11 of depressions. Excitements in this group were in the ratio of 4 to 1 to the depressions, while in the inadequate type the depressions predominated and were in the ratio of 8 to 5.

The average hospital residence after subtracting those who had been transferred from, or died at, the hospital was 4.1 months for males and 2.8 months for females. This difference is accounted for by the few males who remained in the hospital for a year or over because of the environment outside, and cannot be ascribed to the condition of the patients. Of the 183 patients who remained in the hospital, 144 recovered and 49 improved.

TABLE 6

Type	Male	Female	Total	Reaction	Male	Female	Total
Delinquent	33	17	50.....	excitement	26	13	39
				depression	8	3	11
Emotionally unstable	66	50	116.....	excitement	56	36	92
				depression	10	14	24
Inadequate	26	28	54.....	excitement	12	10	22
				depression	15	17	32

Comment

In summarizing some of the findings, it is evident that the condition of psychopathic personality is more common among males. The period at which the difficulties became most apparent is the third and fourth decade, although interestingly enough no age seems to be spared. Those who presented antisocial activities, such as becoming involved in difficulties with the law, indulging in alcohol and drugs, and being shiftless, constituted the majority of our cases. The women, as might have been expected, made up a large number of the inadequate type and a very small number of the delinquent type. The delinquent and emotionally unstable types showed a predominance of the episode of excitement in their psychotic reaction. On the contrary the inadequate type showed depression. Most of the delinquents came from larger families and most of the inadequate types from the single or two-child families. The great majority of our patients made a very rapid adjustment at the hospital, in fact, much more rapid than the statistical average would indicate. The great majority resumed their normal status a few days after admission to the hospital. Most were discharged outright. Those few who were paroled continued to behave as previously, according to their psychopathic pattern. The hospitalization seemed to have no effect upon their conduct and some had numerous readmissions.

In conclusion, we wish to emphasize the importance of this type of maladjustment. The group studied, while not showing any wide or psychiatrically well-defined deviation from the normal, nevertheless presents a very serious problem to the community in general and to psychiatry in particular. This, it appears, is not yet fully realized. When these patients present a psychotic episode simulating the well-recognized forms such as schizophrenia or manic-depressive psychoses, they are usually diagnosed under such headings. Cognizance is not taken of the history of the basic psychopathic personality. When psychopathic personality will cease to be a diagnosis by exclusion and become an entity of itself, then and then only will the full significance of the problem be realized.

Brooklyn State Hospital
681 Clarkson Avenue
Brooklyn, N. Y.

SIX CASES OF PSYCHOSIS ASSOCIATED WITH ILLUMINATING GAS POISONING*

With a Brief Review of the Literature

BY ARTHUR G. RODGERS, JR., M. D.

Medical literature contains many articles on the subject of poisoning by carbon monoxide or illuminating gas. Only a small number of these are to be found in the journals of the medical societies of Great Britain and the United States. While most of these references are devoted to a discussion of the pathology or the neurological sequelae of this condition, a few discuss the mental symptoms and contain the clinical records of cases of mental illness following such poisoning.

In brief, the findings reported are as follows: The pia and arachnoid are congested and sometimes show diffuse hemorrhages. The poison shows a predilection for the lenticular nucleus and especially for the globus pallidus, bilateral symmetrical softenings frequently being found in that portion of the nucleus. These areas of softening sometimes contain thrombosed blood vessels. The other portions of the basal ganglia have also been found to contain necrotic areas. Generalized dilation is seen in the blood vessels, where endothelial proliferation, hyaline thrombosis and fatty degeneration have also been reported. Microscopic examination reveals miliary hemorrhages, areas of softening and thrombosis of the smaller vessels in the cortical white matter, cerebellum and other portions of the central nervous system. Some investigators report atrophic changes in the choroid plexus and in the linings of the third and fourth ventricles. The nerve cells show various stages of degeneration. Many workers report proliferation of glia tissue, aggregations of gitter cells and collections of scavenger cells.

Various theories have been advanced for these changes. It is generally thought that it would be difficult to attribute all of them to the action of a single toxic agent. Ferraro and Morrison[1] suggested the possibility that the changes were the result of a primary carbon monoxide encephalitis, in which the gas exerts a toxic effect upon the living tissue and secondarily, of functional vascular

*Read before the down-State interhospital conference, held at the New York State Psychiatric Institute and Hospital, April 19, 1939.

changes with engorgement, edema, ischemia and softening—or from structural vascular changes with miliary and gross infarctions. Others think there is little evidence of a direct toxic action of carbon monoxide on the tissue cells but ample evidence of changes in vascular function and structure. The gas combines with the hemoglobin reducing its oxygen-carrying power and bringing about tissue asphyxiation, with marked changes and death in the nerve cells. Some authorities believe that the anatomical formation of some of the arteries, namely that they branch at right angles from the middle cerebral artery, constitutes a contributing cause of the areas of softening.

Shillito, Drinker and Shaughnessy,[2] writing in February, 1936, reported on 21,000 carbon monoxide exposures in the New York City area in the 10-year period 1925-1935. Of these, 39 were later admitted to State hospitals serving that area. During the same period of time, there were 80,000 admissions to these hospitals. The ratio of carbon monoxide psychoses to all other psychoses gives the incidence percentage of 0.05, or roughly one carbon monoxide case to 2,000 other psychoses. It also appears that of 500 acute exposures to carbon monoxide gas only one case later showed nervous or mental symptoms.

The same authors state that in all cases which later showed nervous and mental sequelae the patients were unconscious when discovered. They concluded that this constituted strong evidence that a deep intoxication precedes any after effects. They also concluded that the degree of acute poisoning necessary to cause after effects is shown by the length of time required by an emergency squad to establish sustained normal breathing in the patients. In their series of cases, it required on the average 66 minutes of prone pressure or inhalatory treatments, or both, to resuscitate the patients. These patients experienced several days of transient effects such as headache, dizziness and perhaps gastric distress with nausea. The exact time of onset of the symptoms of the nervous and mental sequelae is variable. The cases can be divided into two classes: first, the cases with the onset of the symptoms within one week; second, those with the onset of symptoms after a clear period of from one to three weeks.

Cases showing symptoms within one week exhibited no clear period. Shillito and his associates had a group of 19 such individuals, among whom were most of the patients so severely poisoned that their unconsciousness lasted several days. On recovery from their comatose period, they passed immediately into a confused and disoriented state. Neurological signs were occasionally detectable.

Thirteen of their cases had a clear period of one week or more. They had recovered completely from the acute illness. Many had been discharged from the hospital and had returned to their work. There was an abrupt onset of secondary symptoms on about the tenth day.

The mental symptoms usually were temporary in character. They were confusion, bewilderment and a loss of memory. Events occurring at the time of the accident were forgotten. Hallucinations and delusions were absent. Some cases showed overactivity of short duration. The psychosis was most severe at its onset. The patients rapidly sank to the level of a vegetative existence, being incontinent, untidy, unresponsive and unable to carry out any voluntary acts. They improved within a few weeks, sufficiently to be walking about. The disorientation and confusion would disappear before the memory defects. The memory defects were the last to clear and then only after months or years had passed. This applied especially to the events surrounding the accident. Improvement was noted in from a few weeks to three months after the accident. Most of the patients were sufficiently improved to be paroled, some within one year of the accident.

These patients showed a high incidence of neurologic changes. The most frequent was Parkinsonism, found in five of six cases. Muscular atrophies, skin hyperesthesia and anesthesia, peripheral motor neuritis, auditory aphasia and increased reflexes were also found. These showed steady improvement to complete recovery from within a few days to two years. Six of the cases showed permanent neurologic signs.

Notkin and Savitsky[3] reported the case of a 39-year-old woman addicted to the excessive use of alcohol, who had been found unconscious in a gas-filled room. In the hospital she acted in a peculiar manner, was confused, disoriented and incontinent. Examination showed signs of a peripheral neuritis and Parkinsonism.

She began to show improvement about four and one-half months after the accident and gradually recovered mentally. She left the hospital seven months after the accident showing persistent signs of Parkinsonism, peripheral neuritis, some pyramidal tract signs and mild ocular muscle involvement.

MacKay[4] recounted the case of a 29-year-old male who had been in a gas-filled garage for 18 hours. He recovered consciousness five days later but was confused, disoriented for time and place, and his speech was drawling, monotonous and slow. He followed a gradual but uninterrupted course of improvement until discharged from the hospital two months after the accident. Then, he was sluggish mentally and presented the picture of Parkinsonism. An examination made eight months after the poisoning showed the Parkinsonian syndrome to be more marked.

Rossiter,[5] during 19 years as company surgeon for the Carnegie Steel Corporation, observed two thousand-odd cases of carbon monoxide poisoning. Only one patient had a permanent psychosis.

Grinker[6] described the case of a 58-year-old woman who attempted suicide with illuminating gas during a period of depression which followed an operation for gastric carcinoma. On the twenty-seventh day following her exposure to the gas she began to show mental symptoms. Her orientation gradually became affected, she became completely apathetic and did not speak. She did unusual things such as expectorating about the ward and putting her belongings into a sputum cup. Cerea flexibilitas was demonstrated, her arms remaining for a long time in various positions given them. Symptoms of Parkinsonism were present. Her face was rigid and masklike; the eyes were widely opened and winking was infrequent; muscle tonus was greatly increased in the arms, especially the left and the legs were slightly stiff. She did not make any spontaneous movements. On standing, she fell backward and her gait was small-stepped without the arms swinging. She answered questions only after long pauses and seemed to have great difficulty in speaking. Her speech was slow and monotonous and she finally became mute. She died about two months after her exposure to the gas.

Gordon[7] reported that a man aged 24 years had been found under an automobile unconscious from gas. He remained so for 30 hours,

then was semiconscious, excited, easily disturbed and difficult to control. Two days after the patient was found, his excitement was less pronounced and he was able to take fluids by mouth. On the third day he showed a great deal of mental dullness and no longer was able to take fluids. Six days after the accident, he showed a marked hyperesthesia all over the body and marked resistiveness. The least approach threw him into extreme rigidity: arms and legs hyperextended, facial muscles rigid and eye-globes immobilized. Between attacks, he showed considerable hostility and violence, he rolled from side to side several times in succession and his head also rolled similarly. He was totally unable to recognize anyone, even his nearest relative. He exhibited complete mutism throughout the entire illness. He died at the end of seven days of illness.

Other workers reported cases similar to those quoted above. There is a report[8] of a case of apraxia following carbon monoxide poisoning, another[9] of a case of astasia-abasia and speech perseveration. All of them showed the symptoms common to all toxic states, that is, confusion, disorientation, delirium, stupor, amnesia of retrograde or anterograde type, automatism or slow cerebration and even dementia.

Other symptoms noted were behavior disorders, unusual conduct, emotional disturbances such as outbursts of temper, irritability, tendency to laughter, depression, excitement, indifference, agitation, and mutism.

Case Material

John E., Jr., No. 33288, native-born white male, Polish extraction, age 21. Family history negative. Between his second and third year he had had about ten generalized clonic convulsions, each lasting from 10 to 15 minutes. The cause of these was unknown, and there were no subsequent seizures. He reached the seventh grade at 15 years, but did not like school. He ran away from home in 1935 without giving any reason, going to New York City where he worked in a restaurant. This man is said to have been an ambitious good worker, an abstainer from alcohol, who did not associate with girls and had only one boy friend.

On February 15, 1937, in company with two other men, he was overcome by coal gas. The others died. Our patient was in a gen-

eral hospital for two weeks and two days, was unconscious for two weeks and did not talk for over two months. He recognized his parents at the end of two weeks time and would shake his head in response to questions. He was out of bed two months after the poisoning, but would topple over on attempting to walk if not supported. All of his joints were noted to be stiff. He did not act normally after the accident. For example, he would keep his rubbers on through the hottest summer weather. He disliked the radio and when his mother tried to stop him from cutting the wires he struck her. He sold a new pair of shoes for 25 cents in order to buy cigarettes. He would make foolish purchases, such as buying a half-dozen toothbrushes at once. He threw a cup at his sister. He had $1,500 deposited in the bank and insisted upon going into business when in reality he could not attend to his own wants.

He was admitted to Central Islip State Hospital September 19, 1938. Physical examination showed coordination and balancing power to be poor. Blood pressure was 130/90. Blood Wassermann, urinalysis and the remainder of the examination were negative. The mental examination made September 20, 1938 showed his general attitude to be sullen, antagonistic and disagreeable. He insisted that there was nothing wrong with him, that he was not crazy and that two policemen had told him they wanted to take him for a ride and brought him to the institution. He was somewhat overtalkative and at times incoherent and irrelevant in his speech. He was irritable and easily excited. He told the examining physician of having $250,000 in the bank when in reality he had only the amount stated above. He made many complaints over petty matters saying that people would steal his soap, toothbrush, pennies from his bank and other small articles of personal property when he was not at home to watch his room. He admitted that for this reason he had nailed up the door of his room. He complained about everything and everybody. He denied striking his sister and accused his mother of doing it. He denied threatening other members of the family with a screw driver, saying he intended only to repair parts of the house with that implement. He admitted that at times he refused food at home saying it was not cooked properly. He accused his mother of filthy habits, specifically charging her

with urinating in the wine and giving it to him to drink. He denied that he had witnessed this act but said he could smell the urine. He frankly expressed the belief that all of his family were against him. Hallucinations of all kinds were absent. He was six days in error for the date, but otherwise correctly oriented. He recalled events for the recent past correctly. His remote memory was somewhat impaired. He made errors in doing the simplest mathematical problems and did not have any insight into his condition.

Following his admission to the hospital, his condition continued about the same as described. He was childish in his reaction and plaintful; frequently he blamed his mother for his hospital residence and accused her of becoming intoxicated. He often asked for his release from the institution. He was unkempt and untidy in his general appearance. Occasionally he would assist with some minor task as polishing the floor of the ward, but most of his time was spent in idleness. At no time was he difficult to manage. By November of 1938 he was unable to give the correct date of his admission to the hospital and thought he had been here for four months. On November 24, 1938, the patient was paroled for a period of one year to his father.

His present condition is the same as at the time of parole. He continues to abuse his mother, using bad language and making the same accusations against her as he previously did. He repeatedly berates her for having sent him to the hospital. He smokes cigarettes incessantly and occasionally drinks. He denies all forms of hallucinations. He is disoriented for time, but correctly oriented for place and person.

In this case the patient has suffered some permanent damage to his nervous system. He was predisposed to a psychosis, having had convulsive seizures early in life. His intellectual development as judged by his school work was poor and he did not make a good social adjustment. It would be interesting to know why he left his home, when about eighteen years of age, to work in New York City.

Teresa C., No. 24232 was a 43-year-old native born white woman. She was married at the age of nineteen and had two children, a son aged 24, a daughter aged 19 years. She would occasionally take a drink if offered it but was not addicted to alcoholic liquors. The family history showed that her mother died in Central Islip State

Hospital following a three-year residence; her diagnosis was dementia præcox, hebephrenic type. This patient was described as being stubborn, argumentative and sometimes nervous and irritable towards her husband and children. She enjoyed company and liked to have people make a fuss over her but sometimes had a little trouble with neighbors. She was rather backward with strangers, but "always ready to go places." She was interested in her home, was a good manager and did her work efficiently. She was invariably affectionate toward her husband, and was described as open, frank, self-assertive, prone to impose her will upon others.

During a spell of anger, the patient attempted suicide by inhaling illuminating gas on May 1, 1926. She did this to frighten her husband. She was found unconscious 10 hours later and was taken to a hospital, where she remained unconscious for a total of 36 hours. For the first three days she could not raise her arms. She remained in the hospital nine days. On returning home she complained of pressure on the top of her head and of such dizziness that she did not care to bend over. She was dazed, but fully oriented and complained that objects near to her looked as if they had been removed to a distance. She gradually began to show a speech defect, repeating phrases over and over, but the individual words were well formed. She became more irritable, quarreled with her husband and children and almost at once began to go to doctors complaining of pains in her heart. Her movements became increasingly slower. She did not feel equal to doing her housework without resting from one to three hours in the afternoon. One of the first things she noticed was a decrease in her menstrual flow from one week to two days. She visited St. Luke's Hospital frequently and was always told there was nothing organically wrong with her heart.

She was admitted to Kings Park State Hospital February 9, 1932, five years and nine months after the suicidal attempt. Her speech defect was marked. She was continually worried and all her feelings had a depressive coloring. She was correctly oriented in all fields and no abnormalities of association were found. She made numerous silly statements and showed childish defects in judgment; remote memory was good, recent memory for anything that held a personal significance was good; retention and immedi-

ate recall were poor. She read easily but could not repeat the contents of two consecutive sentences no matter how simple. She could not remember the plot of a moving picture she saw. Her writing was a scrawl but there were no tremors. Her pupils showed hippus, were slightly irregular in outline and there was continual fluttering of her eyelids. The facial muscles on the right side were somewhat weak. Her tongue protruded slightly to the right. The deep reflexes were equally exaggerated. Her speech showed stuttering and rapid repetition of syllables. Her organic defects were curiously patchy. She could recall from sight, but there was definite defect for recall of verbal material. She was discharged May 1, 1932. Diagnosis: psychosis due to illuminating gas. Condition improved.

Following discharge, she seemed better for a year and then began to write disagreeable letters to her husband's relatives. She became antagonistic toward her husband, accusing him of spending his money on other women and of beating her. She was described as "mean" to her children, making them do the housework. She claimed that her dog and cat had been foully killed by spiteful neighbors. February 19, 1934, she was found to have edema of the extremities, chronic myocarditis and a blood pressure of 150/118. She wrote many annoying letters to a police magistrate in an effort to secure a divorce or separation from her husband. She visited the office of this magistrate and used obscene, threatening language, telling him she had complained to the Governor and District Attorney about him. She sent a 12-page letter to a detective. On September 25, 1935, there was a hearing on her charges against her husband and on the same day she was examined and committed to the Central Islip State Hospital.

On admission here, physical examination showed her pupils to be irregular, reacting sluggishly to light. Vision showed myopia. Blood pressure was 160/100; knee jerks increased; ankle jerks not obtained. Speech showed echolalia. She was tense. She discussed her family affairs easily but in a noisy manner. She cried throughout most of the first day of her hospital residence, repeating her complaints about her heart action and expressing the fear that she would die. However, she had a good appetite. The patient talked incessantly during her mental examination. Her speech

was relevant and coherent. Her mood was one of depression but there was no retardation present. She repeated all the statements mentioned above regarding her husband and added that he had had her committed to the hospital so that he might collect her share of her mother's estate. Following her admission to the hospital, her husband found a letter which she had written to her sister regarding an Italian lawyer for whom she had expressed love. About the ward she was indolent, showed frequent periods of emotional instability and laughed at times while talking of her difficulties. In December of 1935, she wrote a voluminous letter, cursing one of the State hospital physicians and expressing a desire to press criminal charges against a judge. Her remote memory was good. She could not repeat the alphabet correctly and was unable to repeat a short story, even the beginning of it. She was correctly oriented. Her knees were weak and trembled when she tried to walk. On April 13, 1937, she was discharged by transfer to the Kings Park State Hospital. Diagnosis: psychosis due to drugs or other exogenous poisons, illuminating gas. Condition improved.

At the Kings Park State Hospital* the patient continued without change. Her husband asked for her release. The patient wrote many letters to the superintendent, physicians and other people, requesting her discharge. She talked so rapidly that it was impossible to understand her and she expressed the same paranoid delusions as above. There was considerable emotional instability, ranging from apparent calm to a good deal of excitement varied by crying. At times, she attended the occupational therapy class and at other times read. She continued to have difficulty in her gait. The neurologic examination on January 17, 1938, showed initial retardation in movements, generalized motor weakness, more on the left and in the lower extremities, generalized hyperreflexia with absent knee jerks. The pupils were eccentric; they reacted promptly but over a limited excursion to light; the fundi did not show any neurological pattern. On January 29, 1938, this patient was paroled for one year in the custody of her husband; her condition was improved. In September, 1938, she showed some further improvement, claiming that she had given up the idea of divorcing her husband, as he had been good to her and "took her all over." She voluntarily expressed the thought that she had

(*This record is used through the kindness of Dr. Charles S. Parker, superintendent).

changed, saying, "I am not so picky." At times, she had some superficial insight. She was doing her own housework. During an interview in October, 1938, it was noted that as the conversation progressed she developed a more marked speech defect, repeating phrases over and over, and had difficulty in constructing sentences to express herself. She was discharged on January 29, 1939. Diagnosis: psychosis due to drugs or other exogenous poisons, illuminating gas. Condition improved.

This woman was predisposed to mental illness by heredity and by virtue of her dictatorial and inflexible personality. These traits were accentuated in the emotional instability and the paranoid delusional formations expressed during the active stage of her psychosis. The memory defects and neurological signs demonstrated by the examination indicate that she has suffered a permanent injury to her nervous system. Her past history would indicate that her comfortable condition at the time of the last discharge from a hospital is a period of remission which may terminate at any time in a recurrence of her active symptoms.

George R., No. 28501, a 54-year-old native-born male of African descent was admitted to Central Islip State Hospital May 17, 1933. He was a laborer in garages, had been married but separated from his wife for several years, a moderate user of alcohol, but an abstainer from drugs. The patient was described by friends as being always cheerful and as doing his work well. On the night of April 9, 1933, he went to sleep, neglecting to turn off the gas jet in his room. The next morning he was found unconscious, was treated by the emergency crew of the gas company and was removed to Harlem Hospital where he received oxygen and methylene blue treatment. He was ready for discharge April 28, 1933, but was disoriented and acted irrationally, turning the lights on and off and turning on the oxygen tanks on the ward. He was transferred to Bellevue Hospital May 8, 1933. There he was dull, apathetic, depressed and retarded. He was dull in comprehension, answered slowly and only after repeated urging. His answers were irrelevant and disjointed. He was partly disoriented and confused, realized that he had been in Harlem Hospital, but could not give the correct date of entry. During the examination, he turned his head to one side as if reacting to auditory hallucina-

tions. The physical examination showed that the pupils reacted to light, the knee jerks were active and a Hoffman reflex was present on the right side. The blood Wassermann and urinalysis were negative.

Upon his admission to the Central Islip State Hospital, his physical examination showed: pulse regular, 54, blood pressure 108/20, lungs and heart negative, pupils did not react to light and accommodation or consensually but were regular in outline and equal in size, and knee jerks exaggerated. He did not cooperate for the Romberg test. The mental examination was made May 18, 1933. The patient was quiet and tractable en route to the hospital, his gait was slow and he appeared acutely ill. The mood was dull, listless and apathetic. He was greatly retarded. It was necessary to repeat questions several times before he would answer them. His answers were relevant. He did not make any spontaneous statements and there was no organic speech defect. He was continually performing some motion, such as fumbling with his bath robe, searching for a pocket in his undershirt, rolling up the end of a blanket, et cetera. His facial expression remained fixed. It was impossible to obtain from him any account of the events leading to his admission to Bellevue Hospital. In fact, he denied that he had been in that institution. No trends or hallucinations were elicited. He was disorientated for time and place.

The patient's condition gradually improved. In October, 1933, he was visited by his sister, who described him as being "normal." By January, 1935, he was in good general health, having gained thirty pounds in weight. He assisted willingly and in an intelligent manner with the ward work. He showed a partial amnesia for the time he had been in Harlem Hospital and in Bellevue Hospital. He lacked insight into his condition but knew that he had suffered from gas poisoning. On March 6, 1934, he was paroled for one year to the custody of his sister in Rochester, New York. Throughout that year, he was regularly described as being in excellent condition, alert, cheerful, with no impairment of memory except for the time when he was in Harlem Hospital and Bellevue Hospital. He was making an effort to obtain work, but was unable to find any. He was discharged March 6, 1935. Diagnosis:

psychosis due to drugs and other exogenous poisons; illuminating gas. Condition: recovered.

Fred V., No. 19615, was a 39-year-old man born in Germany who had been in the United States twenty-three years. He was single, a pastry cook by occupation. The details of his family history and his personality are unknown.

A friend who had known the patient for a year said that he "apparently was all right." About eight days before the onset of the illness the patient called the attention of the proprietor of the place where he worked to the fact that gas was escaping and also complained to his union about it. On Tuesday, January 27, 1925, he was found sitting on the steps of his rooming house. He complained of a peculiar feeling in his head, remained in bed for three days thereafter, refusing to eat and acted as though he were dazed and he did not answer most questions. Other questions were answered with incoherent statements. He was sent to Bellevue Hospital where he was partially oriented for place, careless concerning his personal appearance and attire, indifferent, negativistic and resistive. He exposed himself on the ward. His insight and judgment were poor. He thought that he was in Vienna and denied that it could possibly be New York City. He would laugh and grimace. He complained of the abuse he received from French chefs and waiters with whom he worked.

This patient was admitted to Central Islip State Hospital February 7, 1925. His pulse was regular, rate 80; pupils regular in outline and equal in size; they reacted to light and accommodation promptly, consensual reflexes were present. The hand grips and lower extremities were weak. Romberg was present on the right side; the knee jerk on the right side was increased, on the left it was diminished. The abdominal, cremasteric reflexes and ankle clonus were absent. The plantar and Babinski reflexes were present. There were tremors of the tongue and fingers. His speech was clear. Urinalysis was negative. The mental examination was made February 7, 1925. The patient gave the date as November, 1886, and showed a tendency to repeat this date. He recognized the physician and recognized the stenographer as his secretary. He could not give any explanation for being in the hospital. He denied all forms of hallucinations and all forms of delusional ideas.

He appeared to be physically sick but denied being weak. At times he showed surprise at the questions, especially when told that he had insisted upon calling New York City "Vienna." In fact, he denied that he had made such a statement. He also showed surprise when told that he had laughed and grimaced in a peculiar way in Bellevue Hospital. By March of 1925, he was noted as having improved considerably and was assisting with some ward work. In the following month he had gained 15 pounds in weight, was correctly oriented, was no longer confused and his chief interest was centered in effecting his return to Germany. He was discharged May 11, 1925, to be returned to Pennsylvania. Diagnosis: psychosis due to drugs and other exogenous poisons, illuminating gas. Condition: recovered.

Guadalapa R., No. 22046, female, born in Puerto Rico, age 33, African, single (common-law wife). Her family history as well as her early life and medical history were unknown. The patient was described as being "nervous" at times and of complaining of being tired following unusual exertion, such as doing laundry work. She was an abstainer from alcohol. No previous mental illness.

Her common-law husband denied that he had noticed anything "wrong with the patient's mind" and insisted that the statements she made in the hospital were correct. He stated that while he was at work away from home the patient fainted before the stove. She had just turned the gas on, but had not lighted it. Found unconscious, she was taken to Bellevue Hospital on November 25, 1932. She had regained consciousness by the time she was admitted. During her residence in that hospital she appeared depressed, cried, was restless, fearful, constantly left her bed and wandered about the ward partially clad. She talked in a disconnected way, in Spanish. She was described as apparently having delusional trends of a persecutory character with hallucinations of hearing. She complained of being depressed over Mr. R.'s lack of employment for one year and over their financial difficulties. She said she had heard someone knocking on the window of their apartment. Later "someone had knocked on the door and they took her out."

She was admitted to Central Islip State Hospital on December 7, 1932. The physical examination showed pulse 84, blood pressure

120/80, pupils were regular in outline, equal, dilated and reacted sluggishly to light, but promptly to accommodation. She admitted having had syphilis in 1926. The knee jerks were present but diminished. The urinalysis was negative; Wassermann reactions on the blood and spinal fluid were negative. The spinal fluid showed 12 lymphocytes, globulin and mastic tests were negative. She was restless and excited en route to the hospital, constantly held her head and complained as if in pain. On admission, she was writhing about in an exaggerated fashion, gesticulating, clasping her hands to her forehead or to the back of her neck as if in pain. She took food poorly and complained of nausea. She spoke rapidly and the interpreter could not understand her. The following day, she was more cooperative. She was not depressed but was voluble, earnest, given to extravagant gesticulation and in general seemed childish. She explained the gas episode as an accident, claimed that she had turned on the gas to make coffee, felt as if about to faint, walked to her bed, then fell to the floor and lay there dizzy and helpless but conscious until neighbors smelling the gas and finding the door locked broke in through the window and called the police and an ambulance. She explained her excited behavior as solely due to her objection to being kept in the hospital. She did say she believed she had been delirious at Bellevue because once she remembered thinking she saw skulls. Otherwise, she could describe everything that happened. She explained her dizzy spell by saying that she had had injections for her blood while in Puerto Rico. She also told a story of how at the age of eight years she thought that she could hear strange voices and distant music, that throughout her life time she had had odd fantasies such as the fear that someone was walking behind her on the street and was going to hit her. She was correctly oriented, without gross memory defects, but could not give the date when she went to Bellevue Hospital or the exact length of time spent there.

The patient continued in a comfortable mental state, but was indolent, and childish in her reactions. However, she took care of her own comforts in a satisfactory manner. She continued to tell conflicting stories about the accident. The patient was discharged February 26, 1934. Diagnosis: psychosis due to drugs and other exogenous poisons, illuminating gas. Condition: recovered.

This patient's account of her life history indicates the possibility of an incipient psychosis prior to her exposure to the illuminating gas. This could account for the hallucinations and delusions of persecution which she experienced in Bellevue Hospital. The acute gas poisoning would account for the confusion she exhibited in that hospital.

Anna H., No. 26368, a white woman, age 58 years, born in Germany, was admitted to Central Islip State Hospital on January 23, 1939. She was separated from her husband, had one child, an adult son living and well. She is an abstainer from alcohol. Her personality was not clearly described, but a friend who had known the patient for twenty-three years said she was not given to depression.

The patient's landlady who had known the patient for four weeks prior to her accident stated that the patient had shown herself to be forgetful and absent-minded, a characteristic which was commented upon by other tenants of the house. Several times the landlady had smelled gas and discovered it coming from the patient's room where the gas stove was found to be turned on but not lighted. She embarrassed other people in the house by her confusion. She was often found standing in an uncertain manner in the hall and when asked where she was going would recover herself with a start and return to her room. On these occasions she would say she was not going anywhere, but liked her room and would stay in it. Although she ate alone, she cooked meals large enough for three people. She would perform useless errands in the neighborhood and would go in and out two or three times in the morning, making repeated calls for articles she had forgotten on a previous trip. This was in spite of the fact that it was difficult for her to go up and down the two flights of stairs to her apartment. She frequently left electric lights burning and several times blew out fuses by attaching too many electrical appliances to the circuit at one time. She was always surprised and apologetic when this was called to her attention.

On December 31, 1938, at about 12:30 p. m., the landlady smelled gas and had the patient's door broken in. The patient was lying a few feet from the door as if trying to reach it. One gas jet of the stove was turned on under a kettle as if the patient had forgotten to light it. A window was open about two inches at the top and it

was supposed that the patient had been sitting beneath it preparing vegetables. An ambulance and the emergency squad were called. They revived the patient with the use of oxygen. She tried to speak at that time but was unable to utter a word. The landlady thought that the patient could not have been exposed to the gas for more than one-half hour.

On admission to Bellevue Hospital, the physical examination showed the pupils to be equal and regular but they did not react to light. There was a hematoma in the scalp over the left frontal region and one in each arm. The lungs were clear except for a few scattered rales. The heart sounds were negative. There was a fracture of the right tibia and fibula and the left leg was swollen. The neurological examination showed changing rigidities, sucking and grasping reflexes; the deep reflexes of the arms were hyperactive, the knee jerk and ankle jerk on the left side were absent. There was a positive Babinski on the left side. She was incontinent. The patient was quite confused, her speech halting and disconnected. She said she had not attempted suicide but could not give an account of the accident. Her memory for remote and recent events showed gross defects. She was disoriented for time, place and person and her insight was poor.

On admission to the Central Islip State Hospital, the patient was not acutely ill, but was bedridden. Her pupils were miotic, did not react to light but were prompt in their reaction to accommodation. The deep reflexes of the upper extremities were hyperactive. There was a sustained ankle and patellar clonus and a Babinski reflex with all confirmatories on the left side. Her right leg was in a cast. The abdominal reflexes were present but diminished on the right side. She was aphasic. She showed a paucity of expression, but little change in tonus of the facial muscles. There was a slight atrophy of the right hand. The heart was enlarged; blood pressure 142/96; urinalysis negative; Wassermann reaction on the blood serum negative.

She was carried into the hospital on a stretcher. The mental examination showed her to be confused, unable to help herself and constantly pulling at her clothing. She appeared blank and dull; tried to speak but was unable to express herself. For example, when asked how she felt, she replied, "well it's like anybody else—

oh well—I had—I had—well that's it." Suddenly she looked at the clock and asked "Is that the right time?" The patient showed little comprehension of her situation. She appeared weak and lay with her eyes closed most of the time making no attempt to do anything for herself, but ate what was put before her. She was interviewed at her bedside in both German and English but had as much difficulty in expressing herself in one language as in the other. She showed some degree of aphasia. Her speech was disconnected, at times incoherent and at all times showed reduced spontaneity. She admitted feeling sad and depressed, but denied delusional formations, all forms of hallucinations, and suicidal attempts. She was disoriented for time, place and person. Her memory was poor for events of the recent and remote past. Her retention was nil. She could give the names of the President and of the mayor of New York City, but otherwise her fund of general knowledge was impoverished. She failed to do even the simplest mathematical problems. Insight was absent.

Her condition remains unchanged and she is cared for in bed. She was interviewed March 19, 1939 by the writer. She gave her name as Elsie H. and said she had been here three months. It was noticeable to the examiner that throughout the interview she specifically asked if the questions put to her referred to the present time or to her present location, as the case might be. She could not give the date of her admission to the hospital nor the month during which she was admitted. She became confused when asked for the year, and finally said that she "did not remember any more." When asked to name the institution she hesitated and later said "Municipal." She admitted that she did not know the nature of the institution. The day of the week she gave as the eighteenth and then changed it to the nineteenth of March. She could not give the date of her marriage, but said she had three children (one son only). When asked to name the children, she identified two boys, John and Winfield, and said that each of them had been born July 26, but could not give their ages. She later said she had only one child. She could not tell the date of her admission to Bellevue Hospital or how long she had been there, but later said she was there three months. She denied that she had been ill at the time of her admission there. She hesitated when asked if she had broken her

leg and then replied, "Right." Delusions and hallucinations were absent.

In this case, we have a patient who before her exposure to gas, was showing such mental symptoms as confusion and memory defects. Her subsequent condition indicates that the poison has caused some severe damage to her nervous system in addition to any pathological process already in existence. It is impossible to offer any prognosis at the present time but the results of all examinations indicate the presence of marked mental deterioration.

* * *

These cases present a variety of reactions and represent various personality types in addition to some special features. The typical picture of psychosis following gas poisoning, namely one of marked confusion and bewilderment, loss of memory and the absence of hallucinations and delusional formations, was found in two of our cases, George R. and Fred V. It is worthy of note that each of these patients was described as having a good personality makeup and each of them made a complete recovery. Guadalapa R. showed the same mental reaction following a mild gas poisoning, but her history indicated the possibility of an incipient psychosis and an unstable temperament previous to the gas exposure. She also made a complete recovery. Anna H. showed the same mental picture. There was evidence of incipient psychosis, however, previous to her exposure. She continues to reside in the hospital, showing signs of an organic mental illness and possible mental deterioration. The remaining two patients showed evidence of paranoid delusional formations in addition to the usual clinical picture. John E. showed defective intellectual development and a poor personality makeup in his early life. Superimposed upon this was a severe gas poisoning in sequel of which he continues to show signs of an organic mental illness accompanied by paranoid delusional formations without any insight. Theresa C. was predisposed to mental illness by heredity and a rigid personality. Following a severe gas poisoning, she had continued to show signs of an organic mental illness, accompanied by delusions of a paranoid nature without insight.

She has shown periods of remission but at no time could her condition be classed as recovered.

Central Islip State Hospital
Central Islip, N. Y.

REFERENCES

1. Ferraro, A., and Morrison, L. R.: Illuminating gas poisoning. PSYCHIIAT. QUART., 2:506, October, 1928.
2. Shillito, F. H., Drinker, C. K., and Shaughnessy, T. J.: The problem of nervous and mental sequelae in carbon monoxide poisoning. Jour. A. M. A., 106:669, February 29, 1936.
3. Notkin, J. T., and Savitsky, N.: A case of illuminating gas poisoning with a number of neuropsychiatric sequelae, the main being peripheral neuritis and Parkinsonism. Jour. Nerv. and Ment. Dis., 74:293, September, 1931.
4. MacKay, R. P.: Neurologic changes following carbon monoxide poisoning. Jour. A. M. A., 94:1733, May 31, 1930.
5. Rossiter, F. S.: Carbon monoxide gas poisoning, Pittsburgh, Carnegie Steel Company, 1928.
6. Grinker, R. D.: Parkinsonism following carbon monoxide poisoning. Jour. Nerv. and Dis., 64:18, July, 1926.
7. Gordon, A.: Neuropsychiatric manifestations and their interpretation in carbon monoxide intoxication. Jour. Nerv. and Ment. Diis., 75:520, May, 1932.
8. Nichols, I. C., and Keller, M.: Apraxias and other neurological sequelae of carbon monoxide asphyxia. Amer. Jour. Psychiat., 93:1063, March, 1937.
9. Wolff, H. G.: A case of astasia-abasia and speech perseveration following carbon monoxide poisoning. Jour. of Neurol. and Psychopathol., 7:213, January, 1927.

COMBINED INSULIN AND METRAZOL IN THE TREATMENT OF PSYCHOSES

BY SIDNEY J. TILLIM, M. D.

Insulin and metrazol were introduced under special technique to psychiatric therapeutics in 1933 and 1934, respectively, as curative agents for schizophrenia. It is now known that a much wider field for their application exists. Various degrees of success have also been reported in the treatment of protracted states of mania, depression, of psychotic states found associated with the menopause, and even of mental states due to cerebral malnutrition or general nutritional deficiency.[1, 2, 3, 4, 5, 6]

Many unsatisfactory results with the individual therapies of insulin and metrazol, even in patients ill less than six months, have led to modifications of the original methods. Von Angyal and Gyarfas[7] in 1936 bettered their final results by following a course of one therapy with a course of the other. James, et al.,[8] convinced that "fits are useful therapeutic accidents . . . therefore induced occasional epileptiform seizures by the intravenous use of Cardiazol, insulin being omitted on these days." Early in 1937, Georgi and Strauss[9] presented their "summation therapy" method. They had observed that cases treated with metrazol alone that had experienced injections without obtaining a convulsion showed a much higher percentage of failures. Therefore they sought a way to increase the tendency to convulsions without needing to increase the dose of metrazol. They had observed a stage of heightened irritability to occur regularly during the first hours of hypoglycemic shock,[10] and already held the view that spontaneous convulsions were therapeutically desirable. These considerations led them to practice termination of hypoglycemia with a metrazol convulsion, and shortly after the convulsion to give the necessary glucose. This, then, is their "summation therapy." Erb,[11] who gave several injections of metrazol to each of 14 patients who did not respond favorably to insulin alone, obtained seven good remissions and one improvement. He also treated with insulin 14 cases that had previously failed to maintain the improvement gained from metrazol therapy and claims to have successfully stabilized their remissions. Russell[12] used the summation therapy of Georgi and claims better

results than with each method separately. He believes that his results are better than those which others have obtained by a combination of therapies due to his practice of starting the metrazol injections early in the course of the insulin therapy. After attaining the coma dose for the patient, Russell gives metrazol twice a week until there is marked improvement; he then continues the insulin treatments alone to stabilize the improvement.

In 1937 the author was convinced that whatever was the modus operandi of these two drugs in rectifying psychotic conditions, their effects had much in common, but that either alone was often insufficient to produce the desired result. In the light of reports on alternate and combined methods of therapy there was the added conviction that a convulsion during hypoglycemia enhanced the effects of the hypoglycemia for the duration of convulsion. Therefore to allow the hypoglycemia to continue after the seizure should give the patient full benefit of both reactions. As a result of observations that convulsions early in hypoglycemia were not a necessary indication for termination of the hypoglycemia, it was formulated[13] that "the combination of hypoglycemic shocks and induced epileptiform seizures, whenever it is thought to be therapeutically indicated, should . . . increase the usefulness of both forms of therapy." On the basis of this formulation the following work was undertaken.

The present report is based upon the results obtained in the first 12 patients* treated with insulin and metrazol as a combination therapy in accordance with the above concept. In essence, it is the discriminative induction of one or more epileptiform seizures during a course of hypoglycemic therapy while the patient is in moderate hypoglycemic shock under a dose of insulin ordinarily sufficient to produce coma. Patients were allowed to attain coma after the convulsion. The material consisted of unselected cases with a duration of illness from three months to more than six years. Only two cases were ill less than six months. (See Table 1.) Grouped as to types of illness, cases 1 to 5 inclusive showed many schizophrenic features but their final diagnosis was uncertain, and cases 11 and 12 were considered depressions of the manic-depressive reaction. Except for the two who were frank depressions, the prognoses for the others in the group were either poor or guarded in

*At the Long Island Home, Amityville, N. Y.

respect to a remission. The choice of cases for the treatment was at the discretion of three other psychiatrists; the details of the treatment were left entirely to the author.

Brief abstracts of the case histories from the hospital records are submitted for a better understanding of the material. Their numbering corresponds to that in Table 1.

Twelve Illustrative Cases

Case 1. (S-432) Admitted December, 1937, a single female, age 24. Onset of personality change occurred four years ago.

Family history: Parents of Swedish descent. The father is placid, yielding, solicitous, but passively obstinate. The mother is a "nagger," morbidly circumstantial and loquacious. A maternal aunt is queer and of poor mentality. A paternal aunt was psychotic at her menopause.

Personal history: The patient is an only child. She has always enjoyed good health, but has a congenital unilateral strabismus. She had been kind and considerate, enjoyed reading and showed real ability for drawing and painting. Owing to her tendency to be seclusive, she made few friends. A graduate nurse, she was a good student throughout her training course.

Psychosis: In 1933, while on special duty in a general hospital, she began to express distaste for her work, expressed fear of contagion, became "nervous" and erratic, and tried to change from nursing to office work. By the end of the year she had given up all work, stayed at home, and begun to quarrel with her mother. She accused people of cruelty and trickery towards her. Subsequently, on several occasions she became assaultive towards her parents, once threatening to kill her mother with a knife. She expressed the thought of the ease with which the whole family could be annihilated by her causing a gas explosion. Her fear of contagion increased so that she would not touch ordinary household objects. She led an indolent, sulky, apathetic existence. In the hospital she was uninterested, seclusive, and smiled without cause at times. Although she took part in recreational activities, she was sullen and inactive on the hall and there were several unprovoked episodes of belligerence towards other patients. Her fear of contagion and her animosity toward the parents, particularly the mother, continued. The presence of hallucinations was not conclusively demonstrated.

Case 2. (S-452) Admitted January, 1938, a married female, age 39. Onset of illness came in October, 1935.

Family history: Negative.

Personal history: This woman was born and reared in the midwest; one

of a large family of moderately well-to-do farmers. Her early life and development were uneventful until her senior year in high school when she had to leave school because of an illegitimate pregnancy. She refused to marry the boy, also a high school student, because he asked whether he "had to" marry her. After the birth of the child she returned to school and continued her education until the senior year in college when she was called home to take care of her mother, who had become ill. She stayed at home until she married at 28, thereupon moving to another part of the country with her husband. Two years later she had her only pregnancy by him, and had an abortion performed without his knowledge. She later gave as her reason that she had "seen her sister suffer too much during a parturition."

This woman was well adjusted until 1933 when her child, whom she had left at a maternity home for adoption and from whom she had not heard since then, wrote a letter asking for financial assistance because her foster-mother had died and the foster-father was ill and penniless. When the patient's husband heard of the existence of this child and of her request for help, he became abusive and threatened to leave unless the patient swore not to continue contact with her child. She promised this, yet continued to send money from her weekly allowance for house expenses. Her husband learned of this and another unpleasant scene followed. Thereafter she wept often, stayed home more and more, became preoccupied and depressed.

Psychosis: In September, 1935, the family moved to another community. One month later she stated that things were "hottest" for her. Delusions and ideas of reference appeared—the press, Hollywood, and the radio were commercializing her life story, strangers in the street were identified by her as members of a blackmail gang. She was hospitalized for a year and released against advice as slightly improved. After a stay at home for six months under the care of a special attendant, she again began to react aggressively toward people whom she suspected to be accomplices in the plot against her. In this hospital she readily voiced her paranoid delusions, showed unpredictable outbursts of anger and assaultiveness, probably from delusional and hallucinatory impetus. She was emotionally and intellectually inadequate, silly and erratic.

Case 3. (S-386) Admitted October, 1937, a single male, age 31, ill more than two years.

Family history: Negative.

Personal history: The elder of two siblings, he had an uneventful childhood and early development. He graduated from high school and then studied the violin for one year. At 18 he directed his own band in a hotel, and later played for years with high-ranking orchestras.

Psychosis: More than two years before admission to this hospital it became increasingly difficult for him to hold positions; he quarreled and made unwarranted charges against his associates. He became suspicious and accused people of "double crossing" him, and accused a fellow musician of wanting to kill his mother. He broke contracts of employment without notice and moved to new localities to seek work. He finally laid aside the violin entirely and stayed home doing nothing. Early in 1937 he moved from his parents' home to a hotel. He was observed acting peculiarly and during a period of several months spent his entire savings of several thousand dollars. In the hospital he was usually quiet, aloof, and preoccupied with vague unsystematized delusions of persecution. He was slovenly in dress and in his personal appearance, uninterested in activities, idle, irritable and subject to unprovoked excitement on a paranoid basis. Several times he threatened the physician and members of the family with dire consequences, whereas at other times he was silly and smiled to himself.

Case 4. (S-510) Admitted March, 1938, a single male, age 27, of Austrian Jewish descent, ill since November, 1937.

Family history: Negative.

Personal history: This is generally uneventful. After graduating from public school he started to work, and led an apparently well-adjusted life until the onset of the illness. He was intelligent, industrious, sociable, and a successful salesman. In 1936 a partnership in which he was part owner failed. Thereafter he was unable to find suitable employment.

Psychosis: He worried a great deal and broke his engagement to marry. In November he became depressed, fearful, restless, and had insomnia. After a few weeks he improved somewhat, but continued uneasy without complaining. On March 1 he suddenly disappeared from the house for the day, and that evening he was found in his room attempting suicide by gas. He was again very depressed, fearful, agitated, and said that "some people and the law were after him." He could not tell why but thought he must have done something wrong. In the hospital he admitted the suicidal attempt and stated that he was urged to do this as "the best way out." He was seclusive, suspicious, manneristic, reacted to auditory hallucinations, several times refused to accept food, and had several episodes of excitement with assaultiveness based on ideas of reference. H was slovenly and careless, and showed inappropriate affectivity.

Case 5. (S-607) Admitted August, 1938, a single male, age 31, mentally ill since 1931.

Family history: Negative.

Personal history: This patient had a normal development and enjoyed good health at all times. He was shy and held aloof from others; he was

studious and made good grades. At 22 he graduated from Columbia University with a B. S. degree, and later matriculated at a university in France. During his senior year in college he married a girl whom he had known for a year and with whom he had had sexual relations. He married her out of a sense of duty because she claimed to be pregnant by him. After he had lived with her about six months, the marriage was annulled. The grounds for the annulment could not be determined.

Psychosis: During his sophomore year at medical school in France he lost interest in his studies and complained that people were against him. In November, 1931, he attempted suicide by cutting vessels in the cubital and wrist areas. When hospitalized he claimed to be "the Duke of Paris" and expressed many paranoid ideas. A member of the family brought him back to this country. Except for brief periods of parole, under close supervision of the family, he has spent the intervening time in state hospitals, remaining unimproved. His delusions have undergone some slight changes: He is not the child of his parents . . . these people are merely paid to support him . . . people conspire against him or do things to antagonize him . . . his mother suggests thoughts which cause him to become violently angry at her. In this hospital he was inactive, disinterested, shallow, and apathetic; he often talked and laughed to himself. He showed occasional outbursts of anger and temper which quickly subsided. This happened regularly when his mother visited, but he also showed such reactions to fellow patients. Once or twice he struck another patient without provocation. His only expressed wish about the future was to be a truck driver for his father, who owns a bakery shop and uses a truck for deliveries. This he claimed would give him the desired dignity, power, and self-reliance.

Case 6. (S-435) Admitted December, 1937, a single male, age 20, showed the first signs of mental illness in May, 1936.

Family history: This young man's parents have not lived together for some years, and rarely see each other, though they are not divorced. The father, a civil engineer, is a "nervous" and eccentric individual. The mother is likewise a "nervous," irritable, worrisome person, and shows overanxiety for the patient.

Personal history: He is a large, over-developed youth, weighing nearly 200 pounds, and since his early teens, while in high school, was cautioned against participating in sports because of an alleged heart ailment. However he is a powerful young man, with the heart ailment well repaired. At the age of four, the parents separated. The patient lived with his mother, and often heard unfriendly remarks about his father, but he continued to visit him and spent short vacations with him. During high school and college he was interested in radical youth movement ideas, read much about

"social conseiousness" from fiction and nonfiction. Bookish by inclination, he took his reading seriously.

Psychosis: During his first year in college he began to feel uneasy, expressed ideas of unworthiness and self-depreciation, complained of an inability to concentrate, and suffered from insomnia. He did very poorly during the second semester. During the summer vacation he improved, then resumed his studies in the fall. The earlier symptoms then returned; he threatened suicide, and threatened to kill his mother if unsuccessful in killing himself. He was hospitalized elsewhere in November, 1937. There he refused to see friends because they would know he was crazy. He claimed that his bowels were not functioning, his stomach was "puffing up," his hair and teeth were falling out, that he could only live an hour or two, that his death would kill or drive insane at least a dozen other persons. He was slovenly and indifferent, yet easily argumentative and nasty with others. He was seclusive and did much indiscriminate reading. He was not depressed, even when he expressed his delusional ideas. In another hospital he was diagnosed dementia præcox, paranoid tyype; the prognosis was reported to be "guarded." The course in this hospital was about the same, except that he acquired additional hypochondriacal complaints. He believed he might have syphilis or leprosy, was determined that he had "a hopeless disease of dementia præcox" (he claimed to have glanced at his record in the other hospital). He was apathetic and untidy, often having his pockets full of scraps of newspaper.

Case 7. (S-492) Admitted February, 1938, a widow, age 49, ill since November 1, 1937.

Family history: Data incomplete.

Personal history: The patient was married to a successful business executive and has a grown son and daughter. The children are very timid and uninformed about the life of the parent. The son is distinctly of subaverage intelligence, asthenic, "queer." The daughter is quiet and timid, but seems fairly intelligent and capable. The patient was always a quiet, shy, "homey" person.

Psychosis: Her husband died suddenly from a heart attack in October, 1937. The patient made all arrangements for the funeral and conservation of the estate. A few days later she became depressed, incoherent, and confused. She talked about dying so that she might be with her husband, and that her son might be saved. She lost interest in her personal appearance, behaved in a bizarre manner, became mute and often did not eat. In the hospital this behavior continued. At times she was seclusive, lying quietly on the bed or in a corner on the floor, at other times she wandered in the hall making grimaces and gestures, or stopped to assume queer

poses. Several times she threw herself out of bed. She was mute and uncooperative at all times. Any occasional productions were gibberish or irrelevant phrases. The mood was consistently apathetic, she displayed a sheepish air. Occasionally she smiled and mumbled to herself. Alternately she either refused to eat and had to be tubefed, or she ate ravenously. When she ate she mixed her dishes and used her hands in preference to a fork or spoon. Several times she soiled and showed no emotional response to reproval.

Case 8. (S-500) Admitted March, 1938, a married female, age 24, mentally ill since October, 1936.

Family history: Negative.

Personal history: In infancy she was a difficult weaning problem. At two and one-half years it was noted that she had strabismus of the left eye. At three years she had whooping cough and at six pneumonia. As a child she was irritable, hard to please, and closely attached to her mother. She was graduated from high school, having been a good student throughout. She was socially active but shy, always glad to have a member of the family accompany her to parties. At 17 she was operated on to correct the strabismus, with disappointing results. After leaving school she worked in her mother's bakery, keeping books and waiting on customers.

Psychosis: In June, 1936, she married a young man from the neighborhood, distinctly inferior to her personality and intelligence. Her family opened a small store for him, and he soon lost the entire investment. She worried much about the course of the business and by October she talked about having a venereal disease, developed cleanliness compulsions, was depressed, agitated, fearful, and talked about disgracing her family. Later she claimed that her parents' home was wired with dictaphones to spy on her and the family, that people were stealing her thoughts and reading her mind, that she was to be robbed and buried as a witch, and that her family will be turned into fish by some magic. Voices accused her of ruining her own and her mother's life. She was extremely irritable, resistive and antagonistic to everyone. Whenever she spoke it was always in a tirade, and she calumniated and cursed "strangers who want to harm me and mine." She could not be approached to interest her in any activities as she referred to the nurses and physicians as "strangers." Her appetite was inordinate, but several times she required forced feeding for days. She slept fairly well without sedative. During two earlier admissions elsewhere she had been diagnosed dementia præcox, paranoid type.

Case 9. (S-239) Admitted March, 1937, a single female, age 27, had four psychotic episodes in the four years prior to present admission.

Family history: Both parents died by suicide. Of four siblings an older brother and a younger sister have had depressions that required hospitalization. The youngest sibling has as yet not been ill.

Personal history: Until age 21, she was considered normal, intelligent, industrious and a capable worker. She was a little prudish, and inclined to be secretive.

Psychosis: Her first episode was precipitated after a period of worry over uncertainty of employment and overwork in 1932. She was mute, resistive, apathetic, bedridden for two months, and required tubefeeding. She did not talk for six months and walked or moved with a rigid gait as if *en masse*. She left the hospital improved and continued her improvement, finally returning to work. Eighteen months later she again had to be hospitalized because of maniacal behavior. The patient was noisy, flippant, sarcastic, and rambling in her stream of thought. She was grandiose and labile in her mood. After four months hospitalization she was paroled improved. She was returned for the third hospitalization seven months later. After a residence of six months she was paroled, having improved clinically. The patient was returned five months later for the fourth hospitalization. She was removed after five months, not much improved, to attend her brother's wedding. She improved and had worked about two weeks, when she suddenly relapsed.

She had been on parole only three months when admitted to this hospital. Whereas her last three episodes showed manic features, the present illness resembled the first episode. The patient was said never to have been entirely herself at any time since her first illness. In this hospital she was at first restless, perplexed, resistive, and negativistic. Later she was destructive to clothing, often was found nude, picked her skin and chewed her fingernails, and eventually rubbed away the hair from her head. She maintained queer postures for hours, such as standing on one foot or teetering on her toes. At times she showed excitement with homicidal tendencies. She occasionally soiled and smeared, and was resistive to all care. She required tubefeeding for weeks at a time, and eventually showed marked emaciation. Mute most of the time, she occasionally whimpered "They are going to take my eyes out," "I don't want my arm taken off," "I told a lie—I said you killed him—I killed him myself." She often voiced negations such as "You're not 'Slim'," to her brother; "You're not my doctor," to her physician; "These are not my clothes," when offered her clothing. She echoed questions at times." (Why aren't you dressed?) "Why aren't you dressed yourself?" (Why do you stand naked?) "Why do you stand naked?" To dress or bathe her always required two or more nurses. When she ate voluntarily she ate ravenously and stole food from other patients. Her mood

as judged by facial expression varied: sometimes fear, bewilderment and depression, sometimes apathy or puzzling repugnance, and sometimes mild amusement and interest were exhibited.

Case 10. (S-538) Admitted May, 1938, a married female, age 38, with an acute illness of eight days duration.

Family history: Negative except that a maternal grandmother had involutional melancholia.

Personal history: The patient was considered normal and well adjusted until the present illness. She was described as intelligent, sociable, and capable; somewhat excitable and worrisome by nature. She has been married 13 years, but has only one child six years old. Details of marital life could not be learned. During the last few years the family's economic status declined and the patient resumed work in a factory as dressmaker and designer. She later acquired a part interest in the business. This caused her to redouble her efforts and added to her worries when business was not good.

Psychosis: For more than a year she complained of "nervousness," fatigue, and insomnia. During the first two weeks in the hospital she was noisy, hyperactive, reacted to auditory hallucinations, and had temperature of 101° to 103°. At the end of three weeks she was without fever and her mental symptoms had almost cleared. The improvement lasted a week and then the psychotic symptoms returned, but without fever. She was destructive, soiled and smeared, reacted to both pleasant and unpleasant auditory hallucinations. She was angry and assaultive or smiling and dancing, doing intricate, fantastic steps. She had to be tubefed from time to time, and, even so, lost weight to a point of emaciation. Her mood fluctuated between depression and ecstatic preoccupation.

Case 11. (S-572) Admitted July, 1938, from another hospital, a married female, age 28, ill since December, 1937.

Family history: The father has gone through a depression; a maternal aunt has had mild manic-depressive episodes. The mother is an obstinate, quietly assertive person with great solicitude for the children.

Personal history: The elder of two daughters in the family, intelligent but obstinate, always in good health, she grew up unreasoning and difficult when at odds with members of the family and showed flares of temper and ugly moods. Because of difficult behavior and unreasonableness she spent several months in a mental hospital at the age of 22. She was married at 25, to a young physician who was interning at the time. Married life was difficult because of frequent disagreements, but she did try to adjust to life in a country town where the husband entered private practice.

Psychosis: Her present illness followed a domestic quarrel. She became depressed, seclusive, and inactive. Later she worried about having withheld from her husband information about her previous hospitalization in a mental hospital, and that in the course of this hospitalization a two-plus blood Wassermann was found. She then believed that she had syphilis, had given it to her husband, and he had spread it to many patients. She was hospitalized elsewhere in March, 1938, and subsequently brought to this hospital. Here she was depressed, restless, paced the corridor wringing her hands, biting her fingernails until they bled, begging and pleading with doctors and nurses to have pity, to let her out, that there was nothing the matter with her, et cetera. It was impossible to hold an interview as she kept repeating "What are they going to do to me? What are they doing to me? I'm never going to get out of here. They are going to make an automaton out of me." She believed that her family had died and that she was to blame for ruining their lives. She sometimes talked about the doctors and nurses "doping" her, and wailed that she will become a "hophead." She often expressed fears and ideas of reference, but apparently never experienced auditory hallucinations.

Case 12. (S-532) Admitted May, 1938, a married male, age 31, ill since November, 1937.

Family history: Negative.

Personal history: He was born in Sweden and came to the United States 10 years ago. He found work almost from the beginning and lost very little time from employment until the present illness. He changed his type of work several times, but always to improve his earning capacity. He married four years ago and has one child, but has lived away from his wife the past three years. She was to have her final decree of divorce in August.

Psychosis: The illness began with complaints of indigestion, "neuralgia" in the forehead, and pains "everywhere." A physician prescribed a diet; he lost much weight that he could ill afford to lose, and began experiencing feelings of "passing out" and said his ears "sizzled." During January, 1938, he gave up well-paying employment because he had dizziness, and felt "terrible." He then worried over his invalidism, was depressed, lost his appetite to a greater degree and could not sleep. In the hospital, physical examination showed an athletic type with recent loss of weight, otherwise negative. Mentally he was depressed, easily irritated, restless, and preoccupied with feelings of disability. He had somatic complaints, inability to concentrate, a sense of hopelessness, and occasionally voiced paranoid ideas against the environment. Several times he angrily protested to his physician, "What is going on here in this place?" As he saw other patients make recoveries after insulin therapy he showed greater impatience

TABULAR ANALYSIS OF CASE MATERIAL

Case number	Serial record number	Age and sex	Duration of illness	Duration of treatment	Number of comas	Number of convulsions	Number of insulin treatments	Result	Disposal	Current condition and duration
1.	432	34F	4½ years	2-15 to 4-22	40	0	47	GR	Home	11 months Home. Evidence of renewed disharmony
2.	452	39F	2½ years	4-11 to 6-1	18	5	54	I	Home	10 months Comfortable at home
3.	386	32M	2½ years	3-14 to 6-9	42	4	51	MI	Home	11 months Home, acceptable behavior
4.	510	27M	6 months	5-12 to 6-24	18	2	33	GR	Home	6 months Returned to hospital
5.	607	30M	6½ years	8-29 to 11-11	28	9	54	UI	Hospital	Unimproved
6.	435	20M	x 5 months	2-15 to 5-6	41	1	60	GR	Home	9 months School and working, depressed
7.	492	49F	7 months	5-23 to 6-24	19	3	26	MI	Home	10 months Home activities, good adjustment
8.	500	23F	19 months	3-30 to 6-9	23	3	54	GR	Home	11 months Home, good adjustment, working
9.	239	27F	* 15 months	6-6 to 7-1	9	5	21	GR	Home	5 months Hypomanic, rehospitalized
10.	538	38F	3 months	8-29 to 10-21	26	5	38	GR	Home	5 months Well at home
11.	575	28F	8 months	8-29 to 10-15	18	4	36	GR	Home	5 months Well, making good adjustment
12.	532	31M	9 months	9-3 to 9-23	1	0	16	GR	Home	7 months Well, working

*—ill 6 years with longest remission 6 months; 4 hospitalizations.
x—22 months since first noticeable symptoms.
GR—good remission.
MI—much improved.
I—improved.
UI—unimproved.

with conservative care and became more difficult to please as his physician repeatedly refused to yield to demands for insulin therapy. He was easily annoyed and argumentative, believed he had an incurable disease which the physicians would not, or could not, explain to him, refused to participate in activities, held aloof from other patients, and would shower members of the medical staff with questions whenever they were within speaking distance.

Method of Treatment

1. The patient must be in suitable physical condition for hypoglycemic therapy. However, emaciation due to inanition without intercurrent disease is not a contraindication for beginning treatment. Even cases with heart ailments, without evidence of decompensation, may be carried through safely, with care and caution. The presence of easily accessible veins is indispensable. In combined therapy, even more than in ordinary hypoglycemic treatments, instances arise when rapid approach to a vein is imperative, although such urgency will be exceedingly infrequent if close attention is given to the proper dose of metrazol.

2. Treatment is begun by increasing the insulin dose to that required to produce coma. The treatment is usually administered five days a week.

3. With the second or third coma dose, unless a spontaneous convulsion has previously occurred, or a favorable change in the psychosis has been observed, a convulsion with metrazol is induced. The time chosen is usually early in the third hour after the injection of the insulin, or the time of evident heightened irritability due to hypoglycemia. The dose of metrazol is 3 c.c. or less, depending on the degree of irritability. As little as 1 c.c. can produce an epileptiform convulsion in a properly conditioned person. The 10 per cent aqueous solution of metrazol is used exclusively; a higher concentration is not only dangerous, but unnecessary.

4. After the convulsion, the patient awakens for a brief period of time, and then, within a half hour or so, returns to the previous state of hypoglycemic shock and into coma. During consciousness the patient will drink the necessary sugar solution, if termination of the hypoglycemia is therapeutically indicated. It is a point of therapy to allow the patient to attain coma after the convulsion.

Hypoglycemia is terminated at the usual time, four and one-half hours after the injection of the insulin.

5. Convulsions are induced (if none have occurred spontaneously) once, twice, or three times a week, depending upon the physique and reaction of the patient, and whether a favorable mental change has become apparent. After mental improvement is noted, one or two additional convulsions are induced in the course of further hypoglycemic therapy.

6. No special rest days are allowed on account of a convulsion, unless there are an unduly delayed arousal of the patient from hypoglycemia, severe secondary hypoglycemic shock, or protracted hypoglycemic influence as described by the writer,[13] when longer rest periods are indicated.

In only one instance, Case 9, was a rest day required after a metrazol convulsion. This patient had had two convulsions from metrazol, with doses of 4 c.c. and 4½ c.c., respectively, before starting the insulin injections. She had a spontaneous convulsion with her second coma dose of insulin, 110 units, on June 21, and was given 3 c.c. of the metrazol intravenously on June 23 with her fourth coma dose. The metrazol was given about two hours after the insulin injection. An extremely severe clonic-tonic convulsion followed 15 seconds later, but she did not relax as is usual. Instead, she became flaccid, more cyanotic; apnea persisted, and the pulse became imperceptible. An injection of adrenalin 1-1000, 1 c.c., was given and simultaneously intravenous glucose was begun. By the time 20 gm. were injected, the color, pulse, and respiration improved. It was felt that the patient was entitled to a rest day after this experience. It is of interest to note that this event marked the turning point in her illness. The same afternoon, after 15 months of uncooperative psychotic behavior, she washed and dressed herself, showed intelligent interest in her surroundings, conversed rationally, wrote a coherent letter to her brother, and enjoyed a hydrotherapy treatment. She was slightly overjubilant and anxious to talk to physicians and nurses about her illness, extreme loss of weight and the shortness of her hair. Thereafter progress was rapid.

This case illustrates the importance of proper dosage of metrazol. Hypoglycemic shock lowers the convulsion threshold for the

patient.[9, 10] In a patient disposed to spontaneous convulsions added caution is necessary. In patients who exhibit myoclonic activity even 1 c.c. will produce a convulsion. Two to two and one-half c.c., injected into the vein rapidly, will suffice for nearly all cases showing myoclonic activity.

In the present group the time relationship for induction of a convulsion, in days, to the insulin treatments was not strictly defined, except that the patients received a dose of insulin that was sufficient for coma on the previous day. Cases 1, 6 and 12 did not get any metrazol at all because 1 and 6 were the first cases in the group who made slow but certain progress under insulin alone, and Case 12 had a good remission with only one coma. Case 6 had a spontaneous convulsion with his thirty-eighth coma. With added experience and the recognition that convulsions may be safely induced during hypoglycemia, at little or no added risk to the patient, greater freedom was exercised in producing convulsions. At present the method outlined above is closely adhered to. Additional convulsions are given at irregular intervals, if further improvement is expected. It will be noted from Table I, that the patients who benefited from the treatment did not exceed five convulsions. However, some of them had petit mal seizures (not shown in the table) which probably contributed favorably to the end results. In the more acutely psychotic patients (Cases 4, 7, 8, 9, 10 and 11) there was a definite and sharp relationship between the incidence of convulsions and the inception of recovery. Whatever improvement occurred in the others, the process was gradual. Except for the single experience with Case 9, there have been no other threats to the lives of the patients as a result of the treatment. There was not a single case of difficult termination of the hypoglycemic coma, nor any sign of untoward effect upon the heart. Digitalis was not administered prophylactically, and very few patients required it in the course of treatment. A convulsion from metrazol during hypoglycemic stupor affects the pulse only slightly; in some cases the variation in rate is less than ten. Occasionally, in excited or restless patients, the pulse rate is actually lower after the convulsion. Experience has demonstrated, for the present, that there is little to be gained by more than six convulsions for any one case and that

it is better to wait or to carry on with insulin alone for two or three weeks before deciding on more seizures.

Results

Of the 12 patients treated, 11 improved sufficiently to be paroled or discharged from the hospital. Eight obtained a good clinical remission. The one complete failure was a hebephrenic schizophrenic with habit and intellectual deterioration, actively ill since 1931. Our judgment of "good remission" was based upon evidence of insight into the nature of the illness and apparent restitution of healthy personality and social competency. Each of the patients so designated seemed well enough to return to prepsychotic economic and social activity. To indicate the degree of well-being for the group released from the hospital, brief statements either from the patients or reliable relatives are included. The case numbers are in the same order as are the anamneses.

Case 1 had a good remission, did not know what made her act, think and feel as she had during the illness, but was glad of the change she recognized in herself. She had reasonable plans for return to former usefulness. Seven months later she telephoned to report that she was well adjusted at home. At 11 months she was seen by the writer. Tension between her and her parents had returned, but not entirely without justification. Contrary to advice, on her return home they resumed dealing with her as a mental invalid with oppressive restrictions on her ideas and freedom of action. She is, however, still at home.

Case 2 was considered clinically improved. She still had her delusions but was less reactive to them. She was less susceptible to ideas of reference and hallucinations. She was consistently in cheerful mood as time approached for a visit home. Judgment and insight continued impaired. Six months later the husband reported that she was more comfortable than during her hospitalizations. In his letter he said "She has exhibited no tendencies towards violence . . . She gets along fairly well when she and I go places together but crowds still worry and upset her." Now, 10 months since discharge, she continues to live at home.

Case 3 was clinically much improved. He retained his paranoid

impressions, and refused to resume his musical activities. However, he became sociable, friendly, and expressed a readiness for employment other than as a musician. Six months after release from the hospital he was seriously injured in an automobile accident. He recovered from this without a return of his mental symptoms. He has been home 11 months. When last heard from he was looking for employment as a salesman.

Case 4 had a good remission, realized there had been something wrong with his mind, and at the time of leaving the hospital seemed able and very willing to take employment. Two months later he wrote, "The treatments seem to have eased my mind a lot. I have a more relaxed way of thinking . . . In general it has turned back a couple of years when I was more successful. A lot of sensitivity is gone. I'm not offended easily . . . I could resume my former activity, that is, selling, if opportunity presented itself. . . .At present my job is to get a job. Then I could feel more independent and useful." Early in December he was rehospitalized when he was apprehended by police while trying to force his way to see a man about a position. He was in a dazed and confused state. Despite much effort he had been unable to find suitable employment.

Case 5 did not benefit from treatment, except for some gain in weight.

Case 6 obtained a good remission. Before he left the hospital he had become sociable, friendly, participated in sports, and had even undertaken to learn dancing. He took notice of his personal appearance and made reasonable plans for the summer and the next school year. He lacked insight into his illness; he merely remarked "I feel different and glad of it." He went through the summer in what seemed a hypomanic phase. In the fall he enrolled at the university and also accepted part-time employment as a truckman's helper. He carried his assignments successfully until the beginning of winter when he began to show rather typical depression symptoms. His schedule of activities was then reduced; he still works and attends school.

Case 7 was much improved when she left the hospital for a visit home and did not return. The patient's daughter telephoned the next day that the patient was doing very well, and wished to extend

her visit. Two months later the patient wrote at length about herself. The residual or after symptoms which she described are of interest. The writer has heard them before from patients treated with hypoglycemic shocks. One such patient described by the author,[13] almost two years after her treatments still suffers from a moderate degree of anesthesia and paresthesia. The symptoms are much lighter than they were immediately following treatment. I quote the present patient's letter: "I would like to know if the insulin ? injections have caused me to sort of lose my *taste*. Even water and milk do not taste natural. Lemon flavors seem most natural. Some foods unless I saw them, I would not be able to say what they were—rather annoying. Then my five or rather ten fingertips seem to be numb or asleep with a sort of pricking sensation, and at times, especially after bathing, my body is terribly itchy . . . What annoys me most at the present time is the numbness and pricking sensation in the ten fingertips . . ." A month after this letter her daughter wrote "Her behavior has been quite normal at home . . . There is nothing she has done or said that would lead you to believe she was in such a bad condition only last May . . . She does the housework and prepares all the meals. Goes over town, shopping alone, goes to the movies, reads the newspapers—in short does about everything she used to do before her illness . . . She complains of lack of taste and lack of feeling in her fingertips." She has been home 11 months.

Case 8 had a good remission, recognized she had been mentally ill. She looked forward to the future with reasonable appreciation of changed circumstances; she had given birth to a child and her husband had deserted her during her illness. Information from the patient and a physician relative of hers assures us that she continues well to the present time.

Case 9 gained a good remission. For one month her family considered her in better mental and physical health than at any time in the past six years, the time of her first psychotic episode. Gradually she became hypomanic, however, until, after five months she had to be rehospitalized because of her manic activities.

Case 10 also gained a good remission, could talk freely about her psychotic experiences and behavior. She then would add, "It's like

a dream to me now. I must have been awful sick. I'm glad I don't have those feelings any more." The husband volunteered the opinion that she looked better and was calmer than she had been in more than two years. Four months later she wrote from Florida that she was happy and in the best of health.

Case 11 had a good remission, was recently seen and seems to be in excellent health. She has meanwhile divorced her husband and returned to an active interest in dramatics in which she earned a scholarship before her marriage. If her statements are to be believed, she has already made a good start towards a career for herself.

Case 12 obtained a good remission, returned to his former employment two weeks after he left the hospital. News from him tells of good health and more vigorous interest in his work; he is actually earning more than he did before his illness.

The permanency of the remissions in this group cannot yet be evaluated. Of the 11 who benefited from the treatment, two were rehospitalized approximately five months later. Oddly enough both were considered good remissions when released from the hospital, whereas the partial remissions are still living outside of an institution. This is somewhat contrary to the experience of other workers. There is a reasonable explanation for the disappointing results in cases 4 and 9. Case 4 might have done much better if he had not been confronted with economic difficulties which were such an important element in his past life, so soon after his release from the hospital. Even a good remission, apparently, is not a guarantee against a relapse or recurrence of the psychosis, if a mental strain of sufficient force again confronts the patient. Case 9 may be considered to have had insufficient treatment. The discontinuance of the treatments had nothing to do with the author's concept of adequate treatment, or the physical condition of the patient. Although during her illness she might easily have been considered schizophrenic, as judged by the clinical picture, her subsequent course established her as a depression. This observation also holds true for Case 6, although he has managed to carry a curtailed schedule of activities outside a hospital. Both patients had had partial remissions since the first manifestations of their

illness, 6 years and 22 months, respectively. The best that can be said is that the remissions following shock therapy were of a somewhat better quality, and that such patients continue prone to recurrences of their malady in its various forms. The rest of the group that was treated seems to be doing sufficiently well to warrant the belief that reasonable permanency of the benefits may be expected.

Discussion

It is believed that the high remission rate obtained in this group of patients, and the equally promising results in the group at present still under treatment, are due to the discriminate induction of convulsions during hypoglycemia. It has been demonstrated that in most cases an optimum of five convulsions will suffice for good results, as against 25 to 30 grand mal seizures advocated by Meduna's followers. The required dosage of metrazol is less than half that necessary without the hypoglycemic state, and it need not be materially increased with subsequent injections, if properly timed in relation to heightened irritability. The ill effects of an unsuccessful metrazol injection warned against by Meduna[14] (that of causing relapses even in stages of remission) were not observed. In view of the work by Wespi,[15] Pfister,[16] and Gellhorn,[17] it may be assumed that partial reactions to metrazol under the method described are also beneficial. All our patients had a complete amnesia for the incident of injection and the convulsion, this being in marked contrast to the apprehension and alarm most patients otherwise develop for the metrazol injections. Several patients complained of backache after the first one or two seizures, but did not know why they had the backache. There was not a single incident of fracture or dislocation in the writer's experience with over a hundred injections. This is partly due to the lack of expectancy, ever present with a conscious patient, and partly due to our method of partial restraint. It is our practice to fix a bedsheet across the patient's shoulders and hips. This allows some freedom of activity without excessive torsion of the body and swinging out of the extremities.

The combined therapy is no more dangerous than is insulin or metrazol alone. The occurrence of paresthesia in Case 7, is not pe-

culiar to this treatment. A similar reaction was observed in a woman, aged 52 years, who had four weeks of hypoglycemic shock treatments without a convulsion, and a maximum dose of 58 units of insulin.[13] This woman, although still comparatively well after one and one-half years, continues to complain of disturbance in taste and tactile sense. Cases 2 and 10 had brief periods of disturbance in tactile sense, which cleared up in a few weeks. The writer has previously observed, *supra,* that in older patients some cerebral damage is not unlikely as a result of repeated, prolonged hypoglycemic shocks. Patients past 40 years should not be subjected to prolonged coma; their sensitivity to insulin should be especially supervised.

Conclusion

A method of combining insulin and metrazol as a unified therapy has been presented. The advantages and merits of this approach are described. The results thus far obtained in a group of unselected cases justify earnest consideration and further trial of this method.

The Long Island Home
Amityville, N. Y.

REFERENCES

1. Low, A. A., Sonenthal, I. R., Blaurock, M. T., Kaplan, M., and Sherman, Irene: Metrazol shock treatment of the "functional" psychoses. Arch. of Neur. and Psychiat., 39:4, 717, April, 1938.
2. Bennett, A. E.: Convulsive shock therapy in depressive psychoses. Am. J. of Medical Sciences, 196:3, 420, September, 1938.
3. Gaulocher, A.: Comment. Psychiat. Quart., 12:1, 5, January, 1938.
4. Grosh, L. C., Jr.: Insulin in the treatment of acute mania. Jour. Nerv. and Ment. Dis., 87:5, 559, May, 1938.
5. Ziskind, E., and Ziskind, E. S.: Insulin treatment of psychoses. Am. J. of Psychiat., 95:2, 291, September, 1938.
6. Maurer, S., Wiles, H. O., Marberg, C. M., Skorodin, B., and Fisher, M. L.: Blood chemical changes occurring in the treatment of psychogenic mental disorders by metrazol convulsions. Am. J. of Psychiat., 94:6, 1355, May, 1938.
7. von Angyal, L., and Gyarfas, K.: Ueber die Kardiazolkrampfbehandlung der Schizophrenie. Arch. f. Psychiat., 106:1, 1936.
8. James, G. W. B., Freudenberg, R., and Cannon, A. T.: Insulin shock treatment of schizophrenia. The Lancet, 1:1101, May 5, 1937.
9. Georgi, F., and Strauss, R.: The problem of convulsions and insulin therapy. Am. J. Psychiat., 94:76, Suppl., May, 1938.
10. ——: Ibid., p. 67.
11. Erb, A.: Ueber die Möglichkeiten der kombinierten insulin-cardiazolbehandlung der schizophrenie. Arch. f. Psychiat., 106:1, 1936.

12. Russell, L. W.: Insulin and cardiazol; experience of the combined method. J. Ment. Sc., 84:352, 672, London, September, 1938.

13. Tillim, S. J.: A clinical consideration of hypoglycemic shock therapy. Med. Record, 147:12, 536, June 15, 1938.

14. Meduna, L. von: The significance of the convulsive reaction during the insulin and the cardiazol therapy of schizophrenia. J. Nerv. and Ment. Dis., 87:2, 133, February, 1938.

15. Wespi, Hans: Preliminary report on observations of the autonomic functions in the insulin shock treatment of schizophrenic patients. Am. J. Psychiat., 94:118, Suppl., May, 1938.

16. Pfister, H. O.: Disturbances of the autonomic nervous system in schizophrenia and their relations to insulin, cardiazol, and sleep treatments. Am. J. Psychiat., 94:109, Suppl., May, 1938.

17. Gellhorn, E.: Effects of hypoglycemia and anoxia on the central nervous system. Arch. Neur. and Psychiat., 40:1, 125, July, 1938.

PREPSYCHOTIC PERSONALITY IN ALCOHOLIC PSYCHOSES*

BY EUGENE DAVIDOFF, M. D., AND CARL A. WHITAKER, M. D.

In 1936, Hoch and Davidoff[1] reviewed the prepsychotic personality estimates of 200 consecutive patients in a group of alcoholic psychoses. Stress was placed on the relationship between the personality and the prognosis. Certain interesting facts were revealed in these unpublished data which merited further study. For this reason, we are now reporting on the personalities of 97 recent consecutive admissions wherein alcohol was considered an etiological factor in the psychosis. Twelve consecutive cases diagnosed without psychosis, alcoholism, were also studied so that the number of cases presented totaled 108. In 11 of this series preexisting psychotic states were demonstrated. Four were schizophrenics, three were manic-depressives. Four were organic reaction types and included one traumatic psychosis, one psychosis with brain abscess, one arteriosclerotic psychosis and one paretic.

The personality studies herein presented are based on the 97 remaining cases. That the previous personality has an important bearing on alcoholic states and that there are certain defects in adaptation in the chronic alcoholic is fairly well recognized.[2-9] However, as in all organic and toxic reaction types, the following situations must be considered in regard to the clinical picture or the production of the alcoholic state:

1. Wherein the personality plays the most important role.
2. Wherein both alcohol and the personality are of relatively equal importance.
3. Wherein alcohol itself plays a relatively greater role as in some cases of pathological intoxication and acute alcoholism or in the social drinker.
4. Wherein a preexisting psychosis is present and where alcohol is superimposed or of minor significance as in schizophrenia, manic-depressive psychosis or general paresis. Here there is indication of a severe previous mental disorder and alcohol is more or less incidental, or at best merely a precipitating factor.
5. Wherein coexisting organic or toxic complications such as arteriosclerosis or pneumonia cloud the picture.
6. Wherein there is an idiosyncrasy to small doses of alcohol.

*Read before the upstate interhospital conference, Utica, N. Y., April 28, 1939.

While types 1 and 2 predominated in the series, in general it may be said that in the more acute phases of the alcoholic psychoses, the alcohol itself is relatively more prominent in the symptomatology, although the total personality is of course important. In the more chronic phases of the alcoholic psychoses, the personality assumes a major role. However, it appeared from our material that almost all alcoholic psychoses, even the acute phases, are preceded by relatively long periods of chronic alcoholic addiction and that these psychoses occur in individuals with more or less severe adaptive and integrative defects.

The classification followed is that adopted by the American Psychiatric Association. There were 37 cases of pathological intoxication, 15 cases of delirium tremens, 4 of Korsakow's psychosis, 8 of acute hallucinosis; there were also 21 protracted cases termed "other types," including 12 deteriorating cases, 5 with pseudoparesis and 4 with paranoid trends.

There were 12 cases classified without psychosis, alcoholism, as noted above. It is probably well to point out too, that the chronic alcoholics without psychosis seen at the Syracuse Psychopathic Hospital are of rather severe and protracted type.

At first, a broad survey based on extraverted and introverted tendencies similar to the one employed by Hoch and Davidoff in their report on traumatic psychoses[10] and in their unpublished data on alcoholic psychoses was used. This was formulated in accordance with the predominating attitude of the individual in meeting life situations and was based on the personality studies contained in the guide and outline for psychiatric examination of the Department of Mental Hygiene.[11, 12]

The findings are indicated in Table 1. In the more serious forms of acute hallucinosis and in the deteriorating types, the introverts predominated. In the acute types including the delirium tremens group, and the cases designated as pathological intoxication where the effects noted are more directly the result of the toxic process, more extraverts were found. In the deteriorating group, it was noted that eight of the introverted personalities had recently been in this hospital with a diagnosis of chronic alcoholism, without psychosis. This rapid retrograde "change" occurred in only one of the extraverted chronic alcoholics. Seven of the introverts were

committed for continued treatment to State hospitals while only three extraverts were thus allocated.

TABLE 1

	Introverts	Extraverts	Total
Without psychosis (chronic and acute alcoholic states)	8	4	12
Pathological intoxication	16	21	37
Delirium tremens	2	13	15
Acute hallucinosis	6	2	8
Korsakow's psychosis	2	2	4
Other types (protracted forms)			
Deteriorating	10	2	12
Paranoid	4	1	5
Pseudoparetic	2	2	4
	50	47	97

In order to obtain a more intimate knowledge of, and to delineate more minutely, the prepsychotic personality traits exhibited by individuals in whom alcoholic psychoses developed, the case records were carefully studied for more specific characteristics described in the biographies and occurring prior to their state of chronic alcoholism. These traits and etiological factors in the 97 cases, recounted in the life history, are listed in the order of their frequency of occurrence in Table 2. The chronic alcoholics without psychosis were included because the defects noted closely paralleled those described in the psychotic group. As pointed out above, 9 of the 21 cases with protracted alcoholic psychoses had previously been in the hospital with a diagnosis of chronic alcoholism, without psychosis. Further, 12 cases of pathological intoxication and six cases of delirium tremens had been diagnosed similarly at the time of another admission. In the 21 protracted cases, 13 psychopathic personalities were encountered. It is at times difficult to differentiate between chronic alcoholism and alcoholic psychoses. The line between an episode of acute inebriation in a chronic alcoholic and a true pathological intoxication is often finely drawn.

In the group listed as "reacting poorly to change of state" we included those individuals who are frequently described under the heading of simple adult or social maladjustment. These patients in the critical transition periods of their early life, in the change from infancy to childhood, from childhood to puberty, from puberty to manhood and from the single state to the married state continue

to exhibit significant immature characteristics retained from the previous periods. These include: strong oral, anal, narcissistic or latent homosexual traits, irresponsibility, wish-fulfillment and the desire for more easily sought after gratifications which render their mature adjustment a doubtful and precarious matter.

TABLE 2. PERSONALITY TRAITS

Poor reaction to change of state or simple adult maladjustment	80
Immature sexuality	56
Marital difficulties	54
Circumscribed range of interests	46
Irritability	46
Psychopathic traits with instability	45
Psychoneurotic traits	40
Narcissism and strong self-preservative traits	40
Dependency	38
Mother attachment	35
Abnormal reaction to failure	30
Family and financial worries	30
Sadomasochistic traits (sadistic 17; masochistic 13)	30
Poor social adaptability	30
Depressive moods	29
Latent homosexual traits or tendencies	24
Paranoid bias	24
Compulsive states	24
Feelings of inferiority	24
Father antagonism	20
Failure of compensatory factors	20
Restricted sex outlets or deprivation of loved object	20
Repressive traits	17
Sibling rivalry or spoiled child reaction	16
Suggestibility	12
Impotence or fear of impotence	12
Hypomanic tendencies	12
Mental deficiency	6
Sympathy-getting devices	6
Organic complications	4
Overt homosexuality	3
Married.....74	
Single.....23	

Note: In the fiscal year ended June 30, 1938, the first admissions to State hospitals with alcoholic psychoses comprised 679 males and 152 females.[13]

The various characteristics listed under this heading included laziness, lack of initiative, apathy, ineffectuality, confusion in and inability to meet new situations, or on the other hand, more or less

marked reaction to feelings of guilt, tenseness and inability to relax. Other traits found are failure to take advantage of opportunities and work adjustment which is not commensurate with the opportunities offered or the preparation and training they have had.* The frequent changing of jobs or the seeking of "soft" jobs with a tendency toward routine, dependent tasks, frequent evasion of responsibility accompanied by complaining and querulousness over inconsequentialities, lack of hobbies and creative interest, narrowed and rigid outlooks on life with circumscribed range of vision and restricted range of interests, a tendency to live from day to day, a pervading feeling of emptiness and boredom, a lack of drive and inclination to reminiscence or daydreaming were the characteristics found in this subgroup.

The mechanisms in the psychoneurotic and the psychopathic drinker are closely allied. There are those who crave alcohol to provide a stimulus either to escape their boredom or feelings of guilt or to produce an unreal impetus to their repressed, unutilized creative urges. Occasional unsustained spurts of brilliance arise but in reaction to change of state these individuals revert to more infantile and more primitive methods of gratification and adaptation. They cannot integrate their feelings of guilt constructively. Alcohol "stupifies," allays the conflict and aids in carrying them back to these earlier methods of adaptation in their search to recapture the past. Occasionally they became wanderers or transients. Many of these traits occur in psychoneurotics and in psychopaths who do not drink.

One type of psychopathic drinker often denies the use of alcohol because of an apparent superficial conscious fear of community and social censure. He is only dimly aware of the causes of his alcoholism. He continues to drink because of his unconscious desire to punish himself in regard to these feelings of guilt. He would rather castigate himself for these hidden, unpleasant, unconscious cravings than have an outside authority punish him for alcoholism. He conceals the deep-seated guilt from his conscious self and it is therefore not so apparent to him as his conscious rationalized guilt, that is, alcoholism, which he seeks to conceal from society. Here, the unconscious guilt so far as the individual is concerned, is a

*One of the patients was a graduate of the Massachusetts Institute of Technology but worked for several years as a factory hand.

greater guilt, while the conscious guilt to him is secondary. However, on the surface, and in his apparent explanation to society, he would make it appear that the opposite situation exists. This type of individual frequently denies and "forgets" what he has done during an alcoholic debauch, and insists upon the fact that he is well thought of in his community, or projects his difficulties on the community.

Another type of psychopathic drinker attempts to impress you with the fact that he committed these antisocial acts only because he drank. Here the feelings of guilt are released by the alcohol, which serves as a means of escape or as an unconscious excuse for yielding to lower center cravings. Alcohol then is utilized as a substitute for strong unconscious urges not so well concealed from the person imbibing. He consciously censures and feels ashamed of these. He would rather be punished by authority for his alcoholism than have others aware of these strong urges which were not concealed from him. Here, the conscious guilt, insofar as the person himself is concerned, is the more primary one, and in reality the greater and unconscious guilt is the secondary or lesser guilt. Still, superficially, and in his apparent explanation to society it would seem that the opposite situation exists. The first type deceives himself as well as society, while the second type attempts to deceive only society, and is more aware of the unconscious urges which he will continue to use in his adaptation.

While every psychopathic personality and psychoneurotic does not drink, psychoneurotic and psychopathic traits occur frequently in the prepsychotic personality. Psychopathic and psychoneurotic drinkers offer a great challenge not only as regards their adjustment but also with respect to the concept of chronic alcoholism. It is often difficult to decide whether a given alcoholic presents a definite psychoneurosis or whether psychoneurotic traits are present which predispose to the alcoholic state. The same consideration applies in the psychopathic group. In a larger series of chronic alcoholics without psychosis, we have found it difficult to decide whether either a diagnosis of psychoneurosis or psychopathic personality or chronic alcoholism would better describe the patient. In six of the 12 cases of chronic alcoholism, a diagnosis of psychopathic personality or psychoneurosis would have been equally ten-

able, so that the alcoholism may have been only a manifestation of a severe psychoneurotic or psychopathic state. The psychoneurotic drinkers herein described are usually the moody, depressive, anxious and compulsive types. The psychopathic drinkers are usually unstable or schizoid.

In regard to hypomanic tendencies or depressive moods, it is oftttimes difficult to decide whether one is dealing with a true cyclothymic reaction or whether these latent tendencies are released by alcohol. In a few of these cases a true manic-depressive reaction had to be seriously considered. On the other hand, in the three of the 11 cases with preexisting psychoses (noted above as belonging to the manic-depressive group) alcoholism, although considered as contributory by us, might with some reason be recognized as a more important factor in the production of the psychosis. However, where alcohol was the direct precipitating factor in producing characteristic acute phases of the symptomatology such as delirium tremens, we preferred the diagnosis of alcoholic psychosis. Where the preexisting psychosis was proven to be present prior to recent consumption of alcohol we preferred the diagnosis of manic-depressive reaction.

The alcoholic individual often uses alcohol not merely to escape from, but also to defer the appearance of more severe personality difficulties. In the group of 11 cases, where preexisting psychoses were present, four of whom were schizophrenics, the symptoms were released by alcohol. Among the more severe protracted group of alcoholic psychoses and in chronic alcoholism, a predominance of introverted and psychopathic personalities was noted. The question arises, therefore, whether there is any significant difference between the two groups, except that the alcoholic state releases, or is a manifestation of the deep-seated schizophrenic process in the former group. True, it masks and defers, but it finally contributes to the release of symptoms in the introverted psychopathic personality type. Nor can this be disregarded in the paranoid types, in the more chronic cases of auditory hallucinosis and in those types showing deterioration of the personality.

The primarily extraverted alcoholic drinks because actual situations in the environment become too hard to face and he attempts to "shut reality out." He then uses alcohol to release his compen-

satory or secondary introverted tendencies, and retreats into, and seeks satisfaction from, his own phantasies and cravings. In that way he escapes the environmental situations and the dictates of the superego which he finds difficult to face.

The introverted drinker indulges in alcohol because of his primary tendencies to evade reality, seeking satisfaction in the more primitive cravings arising within himself. When these unconscious urges begin to disturb him or are found unsatisfactory or unadaptable, he seeks to escape them but it is difficult for him to face the environmental forces in a natural manner. He then employs alcohol to remove the primary introverted tendencies—the so-called release of inhibition and the secondary extraverted tendency. Since alcohol is an artificial stimulant (in reality a depressant of the higher cortical functions) it accomplishes this purpose only temporarily and in the long run carries the introverted personality further away from reality. It removes the superego and finally releases the stronger, more primitive, primary, introverted, regressive tendencies. However, at first, he becomes dependent on alcohol in his abortive attempt to meet reality. In the true schizophrenic these primitive urges are more strongly concealed from the total personality and there is apparently less effort to escape from the regressive tendency.

Therefore, alcohol may precipitate a severe personality reaction in a person with predisposed psychoneurotic or psychopathic traits, or in a maladjusted schizoid or maladjusted extravert alcoholism may be a manifestation of the adaptation of that type of personality with an attempt on his part to escape or mask the tendencies. When compensatory factors fail alcohol releases first an acute toxic process or clouded state which pervades the picture. If the process continues, the toxic features tend to disappear and the more severe personality disorders come to the fore. However, it cannot be denied that excessive alcoholism in itself may produce organic deterioration which is partially although not wholly independent of the personality pattern, and may alter the personality pattern regressively, particularly in poorly-integrated individuals who lack compensatory powers.

It seems to us that there is a need for a subdivision in the group of alcoholic psychoses, to be designated as alcoholic personality dis-

orders. In this group, both factors are at first combined but the personality factors finally outweigh the alcoholic toxic effects in determining the course and the regressive personality alterations are more evident. Many of the cases included in the chronic alcoholic group without psychosis might, if more minutely studied, fall more properly into this subclassification of the alcoholic psychoses.

In eight cases where organic or severe toxic factors complicated the picture or were preexistent the course was more protracted and the prognosis more guarded. Deterioration of such mental processes as the sensorium, mental grasp and thinking capacity, is more likely to occur in this type, particularly where the plasticity of the personality is lessened.

Confirmation of some of these observations has been found in the administration of amphetamine (Benzedrine Sulfate) to a number of the patients herein described. Their reactions to this drug indicated that where the toxic alcoholic factors predominated amphetamine was usually effective in allaying these symptoms. Where personality disorders or complicating organic processes predominated and where deterioration was in progress, the results were not satisfactory. The presence of personality disorders may account for the ineffectiveness of amphetamine in the treatment of chronic alcoholic addiction.[14-20]

Case Material*

The following are abstracts of case records demonstrating some of the points under discussion:

Group I—Illustrative of the introverted drinker

Case 1. J. C., 39 years of age, diagnosis without psychosis, alcoholism. He had had three admissions within three years, with the same diagnosis.

This patient was described as a rather quiet child who never caused any trouble. As a youngster, he was bright but left school at an early age. In his earlier years he was much attached to his family. As he became older, he was considered to be selfish, seclusive, and did not want anyone near him. He had many relatives in Syracuse but lived alone in a rooming house where he paid the rent irregularly but tried to "run everybody." He was very finicky, high strung, never confided in anyone and was resistive to explaining his movements. He never went out with women but preferred the company of his own sex. At times he became somewhat irritable and

*We are indebted to Elinor S. Noetzel for some of the social service data contained in these abstracts.

"mean," was annoyed at the landlady, her daughter and friends who came to visit them, but would give no explanation for this. He was a carpenter, was considered a good worker but never held a steady job at this trade.

He has been drinking for the past 10 years. He used to drink in the company of men but lately has been alone. Of late he became more abusive toward his landlady, had been unemployed for a year prior to his first admission; stated that he did not like crowds because they made him nervous. At first, it was noted that drinking made him more friendly but ultimately he became more seclusive and abusive. He was married in 1932 but was separated from his wife four months after their marriage.

He was admitted to the hospital on each occasion because he had been drinking heavily and had become abusive and noisy. No delusions or hallucinations were elicited, nor was there any confusion or amnesia. His I. Q. was average. He evaded questioning relative to why he came to the hospital, minimized his alcoholism and denied that he had been abusive. On one occasion he stated that he came to the hospital to be cured, not to be questioned. He quieted down soon after each admission, became quite cooperative but was never very friendly nor did he present a natural affect. This case might well be considered for diagnosis under alcoholic personality disorder.

Case 2. W. W., 38 years of age, diagnosis dementia præcox, catatonic.

Always very much attached to his mother, W. W. never went out much, was quiet and seclusive, and overly religious. He was bright in the lower grades but soon lost interest, did not care much about school and left when in the sixth grade. He preferred the company of men, had no use for women, was very much devoted to his brother and displayed many latent homosexual tendencies. He worked irregularly as a skilled laborer but when he did work he was very competent. He had been drinking heavily for the past six years. He was admitted to the hospital because he wandered into a house, having broken the lock on the door, stated that he wanted to see the owner and then quietly walked out.

On admission, he was confused and tended to assault. After his confusion cleared up he showed a marked religious trend, heard "the voice of God" and at times saw "visions." He assumed peculiar positions and was found praying constantly. On the ward, he showed many homosexual tendencies and his behavior continued stereotyped and manneristic. Later, during his hospital residence, the auditory hallucinations began to disappear but he continued impulsive, assaultive and surly, and demonstrated a markedly inappropriate affect. Although he was admitted to the hospital in an acute state of alcoholism, after the acute phase cleared up, he showed a typical catatonic picture.

Case 3. E. N., 46 years of age, diagnosis alcoholic psychosis, paranoid type.

E. N. had always been described as quiet, shut-in, not interested in people and appearing to have very little drive. He was bright, had no difficulty in school, attended college for three years and graduated from a school of pharmacy but never owned a store of his own, nor did he work steadily for others. He was attached to his mother and very dependent upon her—he studied pharmacy to please her. His mother was fanatically opposed to people who drank. He was always finicky, particularly about his diet, and insisted on eating exactly four eggs a day. Frequently he went on hunting and fishing trips by himself instead of working or finding recreation in the company of his neighbors.

The patient was admitted to this hospital from a general hospital in an alcoholic stupor after a prolonged debauch. It was elicited that he had been drinking more or less heavily for 10 years prior to this time. After he recovered consciousness and the confusion began to subside he became fearful, responded to auditory hallucinations and thought people were following him. Subsequently, the hallucinations lessened considerably but he continued paranoid and threatening toward physicians and nurses. He was more or less evasive and untruthful. He was quite suspicious of, and finicky in regard to, the hospital food. He finally admitted that he thought people were against him and that his family physician was trying to harm him. His affect improved, however, but he remained more or less confused and suspicious, requiring commitment.

Group II—Illustrative of the extraverted drinker

Case 4. T. M., 39 years of age, diagnosis without psychosis, alcoholism.

The patient's father was described as rather cross, irritable and exacting in regard to the patient but on good terms with him. The mother as well as the patient had violent tantrums and the patient was overtly antagonistic toward her. The patient was always described as pleasant, congenial, a very good mixer; "things came easily to him" but at times he was an unusually hard worker. However, he worked only in spurts. He was always an exceptional student, attended parochial schools, graduated from college at the age of 19 and attended a university abroad. At one time he intended to study for the priesthood but soon abandoned this plan. At college he played football, engaged in many sports, always liked to have a good time, had many friends and was considered most "convivial."

He was further described by those who knew him as having a winning personality, good social background and unusual educational opportunities. He was an accomplished pianist and has been able to secure work in this

capacity in cafés and beer gardens where he had ready access to alcoholic beverages. He liked to impress people with his knowledge of Latin and Greek, and also delighted in recalling his university experiences.

He married a woman of different faith than his and for a while they were very happy and the patient did well financially. He worked as a salesman for various companies. However, for the past four or five years, the patient has been unemployed. At first, he tried to sell vacuum cleaners, cars and other accessories but was not successful. He felt that these things were beneath his dignity and for the past five years has been drinking excessively.

Lately his wife and he have not been getting along and he has accused her of being frigid. He stated that he was too proud and was embarrassed to be on relief. At one time it was discovered that he could not be trusted with money and lost various jobs as a result of this. Many of his friends tried to obtain jobs for him but just as soon as he would start working he would go on a spree. Immediately prior to his admission he became abusive toward his wife, overactive and mildly grandiose.

In the hospital he was somewhat overproductive and boastful, but no delusions, hallucinations nor memory impairment were noted. He had a mild tremor of the extremities. Soon after his discharge from the hospital a job was obtained for him by a friend but because of a drinking episode he delayed accepting this. He then obtained a position as a salesman and was not seen for three weeks. It was elicited that he had become drunk in a hotel in northern New York, where 30 whiskey bottles were found in his room. He had been drinking with various townspeople. When he returned to Syracuse he denied that he had been drinking, stated that he had colitis and could not leave his room. A year later he showed signs of deterioration and was committed.

Case 5. S. M., 37 years of age, diagnosis alcoholic psychosis, delirium tremens.

S. M. was the youngest of three siblings; one brother was a successful minister. His father who had also been a minister was always apprehensive of death and died at the age of 53. His mother, described as a very gentle and sympathetic person, was overprotective of the patient. She remarried two years after her husband's death. The patient had a marked brother identification but later became quite antagonistic toward him. He was described as happy-go-lucky and more or less of a playboy. He went to high school for three years, was fond of music and played in the high school band. He was expelled from high school because he instigated a strike. He was well liked, was happy when he had the center of the stage and always liked company. He had a fear of being alone, and of dying, and the brother thought that this feeling dated back to the time of his father's death.

Soon after he left high school he became a salesman and was quite successful although subject to the customary fluctuations. He wanted to be free and independent and worked solely on a commission basis. He was well liked by his business associates.

He married 14 years ago. At first, married life was congenial but he soon tired of his wife. During the last two years because of business difficulties his wife worked and lived in a nearby town where she was employed. While they were not definitely separated, he took to leaving home for long periods of time and has had several extramarital relationships. For the past year he has been living with another woman in Syracuse.

He began to drink heavily in 1936, always drinking in the company of men, when he drank he had a fear that if he slept he would die. He worked untiringly and found relief in alcohol.

He was admitted to the hospital from a neighboring institution because he saw snakes and insisted on "pulling large worms out of his buccal cavity" which he claimed came from his intestines. He was delirious, tremulous and fearful. During his stay in the hospital he improved rapidly and was discharged as recovered.

Case 6. X. X., 40 years of age, diagnosis manic-depressive psychosis, depressive type, who was at the same time alcoholic.

This woman is said to have been a spoiled child, given to tantrums, who never could absorb discipline yet never liked to take responsibility. She was always mischievous and given to mood swings. The patient was well educated and had worked in a professional capacity. At the age of 25 she married a well-known member of the community. She had always had difficulty in adjusting to her marital life, constantly quarreling with her husband and wishing to have her own way. She stated that she liked to go out but her husband was a homebody who did not like excitement. Following the birth of her fourth and last child she developed many somatic complaints. She said that she was tired. She began to miss the many friends and diversions she had enjoyed prior to the economic depression and found difficulty in adjusting to the change of living conditions.

She had been drinking for the past six years. Previous to her first admission she became more fault-finding and difficult to get along with, overactive, irritable and threatening, and thus began to drink. Following a minor drinking episode she became irritable, broke dishes and threw a knife at her husband. He stated that she had expressed delusions.

When she was admitted to the hospital she showed a great deal of increased psychomotor activity, was restless, manifested flight of ideas and clang association. She was quite mischievous and engaged in a flow of humorous conversation. After a few days her mild confusion cleared but she

continued in the above state for many weeks. She had five recurrent attacks, each precipitated by alcoholic sprees. The two last admissions were complicated by excessive use of barbiturates. It was noted that she had an idiosyncrasy to small doses of alcohol and previously had been diagnosed "neurocirculatory asthenia."

Group III—Illustrative of individuals with psychopathic and psychoneurotic traits or psychopathic personality and psychoneurosis

Case 7. O. P., 39 years of age, diagnosis alcoholic psychosis, pathological intoxication. This case illustrates simple adult maladjustment.

He was described as having been a good mixer, but quick-tempered and at times suspicious. He was given to somatic complaints and to instability. The patient had been a bright student and had graduated from the Massachusetts Institute of Technology. At one time he was employed as an engineer but never held a job steadily. He never got along well with his employers. For the past five years he has been working in a factory.

He was married 10 years ago but never adjusted well to marriage. He allowed his wife to work and took no responsibility. He rarely took his wife out and continued to go on fishing trips with men. He was never happy in one place and was inclined to be easily discouraged.

He has been drinking for the past three years and was admitted to the hospital for the first time after an alcoholic bout. His disturbed state rapidly cleared up. He came back to the hospital within a year, after he had beaten his wife while intoxicated. He was then excitable and boisterous. During the early part of his stay there was some clouding of consciousness; he was confused and his recent memory was impaired. He responded poorly to data of personal identification and expressed ideas of infidelity on the part of his wife. After a week these disappeared.

Case 8. L. P., 41 years of age, diagnosis psychoneurosis, anxiety hysteria.

The patient's father deserted the family when he was a young child. His mother was a kind woman who favored him over his more successful brother. He was antagonistic toward this brother. The patient did not get along well in school although he had an I. Q. rating of 98. He left school in the seventh grade to go to work. He did not obtain a job for himself but worked for his stepfather, with whom he did not get along.

In 1917 he enlisted in the navy. He was shellshocked during naval maneuvers when a cannon was fired unexpectedly while he working underneath it. Since that time he has had attacks in which he would awaken from his sleep in an anxious state and scream, stating that something dread-

ful was going to happen. Following his discharge from the navy he frequently complained that he was choking, had gripping sensations in his chest which made him fearful and anxious. Since his return from the World War he has been less friendly, made no attempt to meet people although he was superficially amiable. However, he was quite critical, continued to be restless, easily upset and frightened.

He was married 15 years ago and while he adjusted well to the marital state his complaints became more marked, and his tendency to work less. He always had difficulty in retaining jobs. He worked sporadically for his brother up until three years ago but was discharged because of an altercation during which he threatened the brother. At that time his brother stated that he had been drinking. For the past six years he has had repeated attacks of acute anxiety during which he would shake, complain of shortness of breath, pain in the chest and abdomen. There were vasomotor disturbances. He would become fearful and disturbed. During this time it was noted that after intercourse he would become excited and complain of feeling weak.

He had had four or five previous admissions to government hospitals because of these attacks. He stated that he drank to relieve the anxiety. He said that he had been drinking more heavily for the past five years but never sufficiently to become intoxicated. However, he stated that while drinking made him feel better temporarily he would become depressed and discouraged thereafter.

He was admitted to the hospital following an attack of anxiety in which he had imbibed somewhat of alcohol. The outstanding picture here is the anxiety state which was more or less precipitated by the alcohol, as well as later difficulties with his wife and son.

Case 9. C. B., 31 years of age, diagnosis without psychosis, psychopathic personality.

The patient's father was at one time a wealthy man in central New York who was very much dominated by his wife. She refused to discipline the patient and interfered with her husband when he wished to do so, so that he responded by totally disregarding the patient. The father committed suicide following bankruptcy. The patient's mother had been in this hospital with a diagnosis of psychopathic personality. The patient was much attached to his mother but very antagonistic toward his brother. He had been a sickly child and at one time it was thought that he had tuberculosis. He frequently engaged in wild schemes which were impossible of realization. He never cared for school and was quite retarded, although his I. Q. was 95. He enjoyed hurting younger children, was dishonest, very much interested

in his own appearance and dressed immaculately. Frequently he went into childish rages.

At the age of 18 he wanted to become a State trooper but his mother refused to allow this because she thought it was beneath their social dignity. He never worked for any length of time. His brother obtained a position for him with a friend but he worked for only three weeks when he walked out and never collected his salary. He was never interested in girls and there was evidence of overt homosexuality. The patient was described as unstable, had little moral or ethical sense and has always been in debt.

He has been drinking heavily for the past five years previous to coming to the hospital. He forged his brother's name to checks and insurance policies but these matters were always hushed up. He began to drink more heavily following one of these forgeries and for this reason was admitted to the hospital. He stated that he moved in society and frequently attended parties with a famous debutante. He assumed a snobbish, superior attitude. He stated that he was living on the income from an insurance policy which his father had left. During his hospital residence there was no evidence of psychosis, yet the patient showed signs of acute and chronic alcoholism. However, it was thought that the alcoholism was secondary to the basic psychopathy. He had had several previous residences in general hospitals, due to acute alcoholism.

Group IV—Illustrative of the organic reaction types

Case 10. H. L., 42 years of age, diagnosis psychosis with other brain and nervous disease, labyrinthitis and brain abscess.

This patient never received any discipline in his early life as his aunt and mother were quite indulgent. He was most dependent upon his mother. He has never been able to take responsibility, was quick-tempered and given to rages early in his life. He had mastoiditis in 1920, had two operations following this and one exploratory operation. He was told that he had brain abscess in 1927 and since that time has become more irritable and less ambitious.

He was married in 1924, never supported his wife and was very dependent upon her. In 1931, he began to imbibe heavily and would have periods of excitement during which he would strike his wife. He became more unstable and unemployable.

He was admitted to the hospital because of attacks of vertigo and confusion. He had been drinking heavily and then assaulted his wife. The brain abscess, alcoholism and poor personality integration contributed to the picture in this case. It was elicited in the history that following the diagnosis of brain abscess in 1927, he became listless, had no ambition and was subject to periods of extreme emotional instability.

Case 11. J. W. J., 59 years of age, diagnosis alcoholic psychosis, delirium tremens. This case is illustrative of a preexisting cerebral arteriosclerosis. The patient was well adjusted and well adapted until four years ago. At that time he went to see a physician who treated him for arteriosclerosis. He began to keep company with disreputable women, spent money freely and also to drink heavily. He was admitted to the hospital because of an attack of delirium tremens. Following his recovery therefrom, the symptomatology of the more chronic condition of cerebral arteriosclerosis was revealed.

Case 12. E. B., 45 years of age, diagnosis alcoholic psychosis, deterioration. In this case, the alcoholism preceded and was contributory to the arteriosclerosis and is a complementary case to the one above.

The patient had been drinking for many years and had other physical complications, including cirrhosis of the liver and chronic nephritis associated with his alcoholic habits and poor method of adjustment. His blood pressure was 200/120 and arteriosclerosis was present. He was admitted to the hospital following an alcoholic debauch and was confused and deteriorated on admission. Thereafter he showed the clinical picture of liver cirrhosis and nephritis although his memory improved. However, he showed signs of early deterioration.

Summary

1. In the more acute phases of alcoholic psychoses, the toxic factors apparently predominate.

2. In the more protracted forms of alcoholic psychoses, the introverted personalities seem to predominate, although organic deterioration cannot be disregarded.

3. There appears to be need for a subdivision in the group of alcoholic psychoses to be designated "alcoholic personality disorders."

4. At times it is difficult to distinguish between psychotic, psychoneurotic or psychopathic individuals who drink, and alcoholic individuals with severe personality disorders.

5. The traits listed above (See Table 2) in order of their frequency are indicative of the maladjustments found in the personality of alcoholism.

6. Complicating organic factors as well as personality integration may influence the severity of the prognosis.

708 Irving Avenue
Syracuse, N. Y.

REFERENCES

1. Hoch, P., and Davidoff, E.: Unpublished data.
2. Bleuler, Eugen: Textbook of Psychiatry. Macmillan Co., New York, 1930.
3. Noyes, Arthur P.: Modern Clinical Psychiatry. W. B. Saunders Co., Philadelphia, 1934.
4. Henderson, D. K., and Gillespie, R. D.: Textbook of Psychiatry. Oxford University Press, 3rd edition, 1932.
5. Raynor, Mortimer W.: Psychiatry and the general practitioner. N. Y. S. Jour. of Med., 35:6, 239-247, March 15, 1935.
6. Allen, E. B.: Alcoholism as a psychiatric medical problem. N. Y. S. Jour. of Med., 38:23, 1492-1505, December 1, 1938.
7. Miles, Walter R.: Psychological factors in alcoholism. Mental Hygiene, 2:4, 529-549, October, 1937.
8. White, Wm. A.: Outlines of Psychiatry. Nervous and Mental Disease Publishing Co., 1929.
9. Freud, Sigmund: The Basic Writings of Sigmund Freud. Random House, Inc., New York, 1938.
10. Davidoff, E., and Hoch, P.: Preliminary observations on the course of the traumatic psychoses. Jour. of Nerv. and Ment. Dis., 90:337-343, September, 1939.
11. Kirby, Geo. H.: Guides for History Taking and Clinical Examination of Psychiatric Cases, State Hospitals Press, 1921.
12. Cheney, Clarence O.: Outlines for Psychiatric Examination. N. Y. S. Dept. of Mental Hygiene, State Hospitals Press, 1934.
13. Pollock, Horatio M.: Personal communication.
14. Davidoff, E., and Reifenstein, E. C., Jr.: Treatment of schizophrenia with sympathomimetic drugs: Benzedrine Sulfate. PSYCHIAT. QUART., 13:127-144, January, 1939.
15. Davidoff, E., and Reifenstein, E. C., Jr.: The stimulating action of Benzedrine Sulfate: a comparative study of the responses of normal persons and of depressed patients. J. A. M. A., 108:1770-1776, May 22, 1937.
16. ——:The treatment of alcoholic psychoses with Benzedrine Sulfate, J. A. M. A., 110:1811-1812, May 28, 1938.
17. ——:Benzedrine Sulfate therapy—the present status. N. Y. S. Jour. of Med., 39:1, 42-57, January, 1939.
18. ——:The results of 18 months of Benzedrine Sulfate therapy in psychiatry. Am. Jour. of Psychiat., 95:4, 945-969, January, 1939.
19. ——:The use of amphetamine (Benzedrine Sulfate) in alcoholism with and without psychosis. Read at the annual meeting of the Medical Society of State of New York, April 26, 1939. To be published in the N. Y. S. Jour. of Med.
20. Davidoff, E.: A clinical study of the effect of benzedrine therapy on self-absorbed patients. PSYCHIAT. QUART, 10:652-659, October, 1936.

THE AGGRAVATION OF MENTAL SYMPTOMS BY EXCESSIVE USE OF HYPNOTICS AND SEDATIVES*

BY L. S. WONDOLOWSKI, M. D.

Introduction

Hypnotics, according to Weiss,[1] are drugs that induce sleep. Sedatives and anagelsics are chemical agents that are designed to decrease the sensitivity of the central nervous system and diminish or abolish pain. He points out that the same drug in varying dosage is used as a sedative or a hypnotic, and that if sleeplessness is caused by pain, an analgesic becomes a hypnotic; contrariwise, hypnotics may act indirectly as anodynes. Accordingly, sharp separation between these types of drugs, so far as effect is concerned, is not feasible.

The extensive use of hypnotics and sedatives in general medicine dates back only to comparatively recent times. According to Sollmann,[2] the hypnotic action of the bromides was discovered following attempts to use them as substitutes for the iodides. From 1853 they were used in epilepsy, and since 1864 also as hypnotics. Chloral hydrate was introduced by Liebrich in 1869, and paraldehyde by Cervello in 1882. In 1888 Bauman and Kast introduced sulfonal. Finally, with the introduction of barbital, the first member of the barbituric acid series, by Fischer and Mering in 1903, the way was opened for the subsequent introduction of numerous compounds of barbituric acid. The "New and Non-official Remedies" of the Council on Pharmacy and Chemistry of the American Medical Association, lists some 23 compounds. Curran,[3] in his paper on "Barbiturate Intoxication and Psychosis," says that theoretically it is possible to create through chemical manipulation approximately 1,225 such compounds.

Reporting on the physiologic effects of barbituric acid compounds, Curran[3] says that in hypnotic doses the gait becomes unsteady, somnolence and drowsiness appear. The respiration is slowed, heart rate increased, blood pressure constant or lowered, body temperature lowered, and the peristaltic action of the stomach is decreased. Strong stimuli can partially counteract the som-

*Read before the down-State interhospital conference, at the Psychiatric Institute and Hospital, April 20, 1939.

nolent action of the drugs. Death, if it occurs, is due to respiratory paralysis or vasomotor collapse. He mentions that the usual toxic dose of barbital is over 50 grains. Polatin[4] gave 5 to 30 grains of sodium barbital daily over a continuous period of 1 to 20 months to 80 disturbed patients without producing addiction to the drug. There were a few toxic symptoms and these disappeared within 24 hours after withdrawal of the drug. Chang and Tainter[5] reported the case of a student who took 270 grains of sodium barbital with suicidal intent. He was in deep coma for six days and recovered. Curran[3] finds that no tolerance appears to develop through the use of the barbituric acid compounds. Instead, due to slow elimination and degradation within the body, or fixation within the tissues, the effects of the drug tend to be cumulative. No deprivation symptoms develop on discontinuance of the drug. Curran, however, supports the thesis that the administration of sedative and hypnotic drugs to the emotionally unstable is fraught with the possibility of inducing habituation.

Among the toxic symptoms of the barbiturates, Menninger[6] describes two types of skin eruptions in patients receiving phenobarbital: an urticarial, and a scarlatiniform eruption. Loveman[7] describes skin eruptions due to alurate. Curran[3] mentions that the barbiturate rash involves the trunk and the extremities. In acute intoxication, he notes, there is usually deep coma which varies in intensity and duration. The characteristic mental symptoms range from drowsiness and mental cloudiness to deep coma. There is disorientation, a narrowing of the horizon of attention, and frequently there are delusional experiences.

Deep reflexes are depressed and general convulsions may occur during the coma or the mentally cloudy state. Occasionally the Babinski sign is present. As consciousness returns, cerebellar signs appear—nystagmus or nystagmoid movements, asynergia, adiadokokinesis and hypotonia. There is difficulty in swallowing and a slowing of speech. The patients usually show a hypomanic picture, which may persist after all neurological signs have completely disappeared. During chronic intoxication he found some difficulty in concentration, occasional disorientation, and often an incongruous euphoric-like state which may be the only symptom and may dominate the picture.

Hypnotics and sedatives are among the most frequently used drugs in medicine. Weiss[1] believes that the barbituric acid preparations are the most widely used. Curran notes that there appears to be an increase in the abuses of the barbiturates, both as the drug of choice in attempted suicide and for self-medication. Because of their cumulative action they often produce a train of symptoms which warrants in some instances admission to general or special hospitals. He urges that the medical student and the general practitioner should be familiar with the dangers associated with the use of these drugs.

Numerous cases of barbituric acid intoxications have been reported. Work[8] reported 100 cases in a three-year period at the Denver General Hospital. Leake and Ware[9] reported 61 cases of poisoning in a two-year period at the Los Angeles General Hospital, 19 patients using the drug with suicidal intent. Bleckwenn and Masten[10] note that the barbiturates lead the list of chemical means used for self-destruction. They report 6 cases of poisoning with recovery in 5 by the use of picrotoxin. Kohn, Platt and Saltman[11] report 3 recoveries with picrotoxin out of 4 cases of poisoning by barbiturates.

Because of the popular use of hypnotics, Weiss[1] raises the question whether their use may not have a deleterious effect on a large section of the consuming population. He aptly points out that hypnotics are only symptomatic remedies, adjuvants at best, and that their use is not without danger. The untoward actions he blames on poor circulation and interference with detoxification and elimination in the liver and the kidneys, especially when the latter are diseased. Iodiosyncrasies to small doses and overdoses cause toxic reaction. The synergistic action of these drugs, when more than one is used, before the first wears off, may produce dangerous symptoms.

Not the least of the untoward results following the excessive use of hypnotics is the release under their influence in some cases, of latent mental aberrations which may be aggravated and brought to the surface. Such untoward effects are often not recognized and the condition is aggravated by the further increase or repetition of the drug.

Case Material

Three cases to be described here briefly are cited as examples wherein excessive use of sedative and hypnotic drugs not only increased the excitement and made more difficult their handling but also complicated the diagnosis and prolonged the morbid period.

Case 1. A young male laborer, age 29, had been drinking heavily and regularly for five years. On November 26, 1938, a week after he began to act strangely and talk foolishly, he was admitted to a general hospital. He was considered to be suffering from delirium tremens. At first he was fairly quiet, seemed mute, refused food, soiled himself. Two days after admission he became restless, was disturbed by visual and auditory hallucinations, and was given one capsule of nembutal. The following day he imagined that he was going to be tried by the grand jury for shooting cows, and received one capsule of seconal. On the third day he talked incessantly and became assaultive. He was given one capsule of nembutal at 12:10 a. m., morphine sulphate, grains 1/6 at 1:30 a. m., and one capsule of nembutal at 2:30 a. m. He shouted, cursed, screamed and loosened the restraint. On the fourth day he received whiskey, ounces 2; paraldehyde, ounces 2. On the fifth day seconal, capsule 1 was given. On the sixth day another capsule of seconal was administered. On the seventh day he received paraldehyde, ounces 1; nembutal, capsules 2. The patient continued shouting, singing, praying. On the eighth day he received two capsules of nembutal. On the ninth day, nembutal capsules 4, and on the tenth day elixir of triple bromides, drams 1 at 10:00 a. m., 2:00 and 6:00 p. m. were used. During the next 11 days, as the patient's disturbance and activity increased so did the variety and the quantity of the drugs. Despite all of them his activities continued unabated.

To recapitulate: During the three weeks that he remained in the general hospital, he received the following medications: 12 capsules of nembutal, 1/6 grain of morphine sulphate, 3 ounces of paralydehyde, 5 capsules of seconal, 405 grains of triple bromides, 310 grains of aspirin, 15 grains of chloral hydrate and 2 ounces of whiskey. Over and above these drugs, he required mechanical restraint, continued to be hallucinated and delusional, was confused, resistive and ate poorly. He was finally brought to Middletown State Hospital by ambulance, December 17, 1938.

On admission the patient was haggard, undernourished and unsteady in gain. A generalized papular eruption was present, particularly marked on the forehead. Furuncles were found on the face, a large decubitus sore over the coccyx. There were marked tremors of lips, tongue and fingers.

The patient was put to bed, all sedatives were discontinued and a nourishing diet was substituted. Within three days his confusion and hallucinations disappeared and he became completely clear. He gained strength rapidly so that in a short time he was working in the occupational therapy class and enjoying parole of the grounds.

It was the opinion of the members of the staff that the sedatives not only prolonged the psychotic reaction, but that they superimposed upon it a drug delirium.

Case 2. A married woman, age 48, was characterized by a suspicious and jealous disposition, with a history of various somatic ailments and discomforts. Her marital life was unhappy because her husband was alcoholic and persistently kept company with imbibing cronies. He was inconsiderate, unkind and unsympathetic toward her. She suspected him of infidelity, with the result that they began to quarrel frequently. After the death of her eldest and favorite son, she became very unstable and depressed, cried and could not sleep. She talked of suicide in order to be reunited with her dead son. She drank much coffee, smoked incessantly and ate poorly. On several occasions she made dramatic suicidal attempts, as on one occasion she climbed to the roof top and threatened to jump down unless her husband stayed home. This woman was finally coaxed into seeing a physician who gave her a box of luminal tablets for her condition. She took 12 tablets at the first opportunity and telephoned a son of her deed. She was found on the floor, talking incessantly, thrashing about, raving. This varied with a drunken and stuporous state.

In the hospital she was delirious, excited, very restless. Her speech was thick. In spite of her confusion and restlessness, she stayed in bed. A nourishing diet and plenty of fluids were ordered. Within a week she cleared up completely and was discharged 23 days after admission.

Although this individual's case was considered one of reactive depression in a psychoneurotic, her admission resulted from an overdose of luminal. The prescription of sedatives in substantial quantities offers opportunities to patients so inclined to use them for suicidal attempts.

The following case illustrates the results of self-medication. The individual was in the habit of taking a preparation called "Bromidia." This preparation has contained bromides and chloral hydrate, the amounts varying through the years.

Case 3. This patient, a white male, 52 years of age, was always rather "queer," was markedly exhibitionistic and liked to dress up his car with

various gadgets as well as many medical insignias. For a while he practised as a chiropractor, then took up nursing and was thus employed.

A week before admission, he became ill, stayed away from duty, and asked for a physician. When seen, he was found lying in bed, in his underwear. The room was closely shuttered, the shades were drawn. He talked for half an hour without making any reference to his physical condition. When asked why he did not have some fresh air in his room as it was quite stuffy, he briefly dismissed this question by saying he wanted it so. He talked rapidly, expressing grandiose ideas, boasted of his wealth and abilities. He said he had thousands of dollars in his pocketbook on the dresser and that he was willing and ready to do whatever the physician would order—would go to a sanitarium and pay $100 a week if necessary. He said he was going to purchase a plane and fly to Mexico because his health required it—told of having made arrangements to go to Florida on a vacation in his $2,000 car. He boasted of his abilities as an osteopath and of the "wonderful cures" he had effected. When again reference was made to his physical condition he immediately diagnosed his illness as "intestinal flu." He stoutly denied that he had asked for a physician. Steps were weak and faltering and he held on to the walls for support. After a few days he was no better and when urged made an application for voluntary admission as a patient. In his application he stated, "my mind is hazy. I can't seem to remember things."

In the hospital he was listless, confused, indifferent and lay willingly in bed. He was delirious, picked in the air with his fingers, or else simply stared at the ceiling. Responded little to questions, made irrelevant replies and expressed visual and auditory hallucinations. He saw and heard imaginary persons talking to him. A week after admission he made a half-hearted suicidal attempt, trying to cut his wrists with a broken eyeglass. Shortly afterward he lost his delusions and hallucinations, and his sensorium cleared. Appetite and sleep improved, he gained weight and strength. He was hazy about what had happened to him. He explained he had been worried and overworked and had over-indulged in "Bromidia" for some time. He blamed his troubles on the drug. In less than two months he recovered his weight and strength and was discharged.

The staff opinion was that the reaction resembled a bromide delirium and the diagnosis was made of psychosis due to other exogenous toxins (bromides).

Comment

1. A brief historical reference is made to the literature concerning the use of hypnotics and sedatives.

2. Some of the physiologic and toxic effects of the barbiturates were mentioned.

3. Three cases were briefly summarized, in which hypnotics and sedatives contributed to the production of mental symptoms of grave enough nature to cause hospitalization.

4. In each case recovery followed on the complete withdrawal of the offending drug or drugs, with routine hospital treatment.

REFERENCES

1. Weiss, S.: The clinical use and dangers of hypnotics. J. A. M. A., 107: 2104-2109, December, 1936.
2. Sollmann, T.: A Manual of Pharmacology. Third Edition. W. B. Saunders Company, Philadelphia, 1926.
3. Curran, F. J.: Barbiturate intoxication and psychosis. Amer. J. Psychiat., 95:73-85, July, 1938.
4. Polatin, P.: Prolonged sedation with sodium barbital. PSYCH. QUART., 11, No. 2, 213-221, April, 1937.
5. Chang, D. K., and Tainter, M. L.: Unusual case of barbital poisoning with recovery. J. A. M. A., 106:1386, April 18, 1936.
6. Menninger, W. C.: Skin eruptions with phenobarbital (luminal). J. A. M. A., 91:14-18, July 7, 1928.
7. Loveman, A. B.: Experimental aspects of fixed eruptions due to alurate, a compound of allonal. J. A. M. A., 102:97-101, January 13, 1934.
8. Work, P.: Barbital (veronal) addiction. Arch. Neurol. and Psychiat., 19:324, February, 1928.
9. Leake, W. H., and Ware, E. R.: Barbital (veronal) poisoning. J. A. M A., 84:434, February 7, 1935.
10. Bleckwenn, W. J., and Masten, M. G.: The antidotal treatment of barbiturate intoxication. J. A. M. A., 3:504-507, August 6, 1938.
11. Kohn, R., Platt, S. S., and Saltman, S. Y.: The picrotoxin-barbiturate antagonism. J. A. M. A., 3:387-390, July 30, 1938.

INJURIES SUSTAINED DURING THE COURSE OF METRAZOL SHOCK THERAPY*

BY C. C. GRAVES, M. D., AND F. P. PIGNATARO, M. D.

Metrazol, or pentamethylenetetrazol, has been used for many years as a stimulant in medical and surgical work. In Europe it has been known as Cardiozol. It was not until 1933, however, that the use of this drug was inaugurated in the treatment of certain mental diseases. Von Meduna[1] of Budapest was the first to use metrazol in this field when he observed that a "biological antagonism" existed between epilepsy and dementia præcox (or schizophrenia). A review of the case histories of 6,000 schizophrenics had shown that only eight of them had experienced convulsive seizures. Consequently, von Meduna set about reproducing epileptiform convulsions in schizophrenic patients. Since then, metrazol has come to be used in a variety of mental disorders.

In November, 1937, this institution† initiated its metrazol shock therapy. We employ the 10 per cent solution intravenously, usually starting with doses of 5 c.c., maintaining this amount until it ceases to cause a convulsion, at which time we increase the dose by 1 c.c. each time until we produce a convulsion. The treatments are given three times weekly in the fasting state, the total number varying with each individual patient. The patients are accepted for this form of therapy after a very careful physical and mental examination. Prospective subjects with organic physical disease are eliminated.

Metrazol stimulates the vasomotor and respiratory centers in the medulla and the motor cortex, causing an epileptiform convulsion of varying degree a few seconds after it is injected.

Results with this type of therapy have been gratifying although we have met with some rather serious complicating elements. In this paper we are limiting ourselves to a discussion of the various injuries encountered during the course of this type of treatment.

Our injuries have ranged from a dislocation of the mandible, easily reduced after the convulsion, to the more serious type, such as fractured spines. By far the most important injuries have been

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†The New Jersey State Hospital, at Marlboro, N. J.

the compression fractures of the dorsal vertebrae. In our cases, no other portion of the spine was found to be affected. Seemingly, therefore, the dorsal vertebrae are the most vulnerable, and for the purpose of this study, may be called the "metrazol vertebrae." Our observations reveal that these compression fractures always occur in exactly the same region: namely, the second to the eighth dorsal vertebra inclusive, so it would appear that the same muscular contractions are at work during each convulsion. The mechanism is apparently a forced hyperflexion of the spine, or so-called "jackknifing," in practically all cases. The middorsal spine is most frequently involved.

It is interesting to note here that the first case of compression fracture of the spine coming to our attention took place in a psychoneurotic patient who had many hypochondriacal complaints. For several days he spoke bitterly of pain in his back, especially in the interscapular area. At first, we naturally believed the patient to be malingering since he had a marked fear of metrazol. However, a careful examination revealed exquisite tenderness and pain in the region of the thoracic spine. This was X-rayed, the radiographs showing bone pathology in the fourth, fifth, sixth, seventh and eighth dorsal vertebrae. We noted compression in these vertebrae together with patchy decalcification and erosion of the anterior portion of the bodies. At the time no importance was placed on the relationship of the metrazol convulsions to the pathological findings in the dorsal spine. We considered the possibility of destructive osteitis, multiple myeloma, and even a metastatic malignancy. However, as the metrazol therapy progressed we made it our policy to X-ray every patient complaining of back pain. As a result, the mystery became clear; we were dealing with compression fractures of the dorsal spine involving the bodies and the articular plates.

In our experience, wherever we have had definite radiological evidence of fracture, we have noted back pain, tenderness over the spinous processes of the injured vertebrae and absence of all neurological signs. However, not all patients complaining of back pain were found to have fractures. Other workers[2] have reported fractures without having any of the above mentioned signs and symptoms. When metrazol causes a fracture, it usually occurs during

any one of the first five injections, consequently, early detection of these injuries is very important so that no further convulsions be induced.

Our treatment has consisted in placing the patient in bed in hyperextension for at least eight weeks, employing immobilization in the form of a plaster shell or jacket. After the patient is out of bed this is followed by a spinal brace for another period of six to eight weeks. For the disturbed patients it has been almost impossible to give the fractures adequate care, as these patients tear the casts off at the first opportunity. Some have had casts applied two or three times with no success in keeping them on. These patients frequently remove their restraints also and are found out of bed. With such uncooperative cases we have had only one clinically undesirable result in the form of a slight kyphosis.

At the present time we are utilizing two possible methods of preventing these injuries. One is a preconvulsive X-ray study of the dorsal spine to determine its integrity. The other is a form of sheet restraint, consisting of a cotton sheet 2 feet, 6 inches wide by 12 feet long. This sheet is folded lengthwise, is placed on the anterior portion of the chest and carried around to the back and over both arms. The sheet is kept spread as much as possible and is held tightly in place by two attendants, one on either end, until it is removed when the convulsion is over. Both knees are also held down during the convulsion. On our male service, if the spine shows any pathological changes, such as lipping, decalcification or changes in the intervertebral discs, the patient is not given this form of therapy. On the female service, no attention has been paid to the preconvulsive X-ray, only the sheet restraint being used. Since these preventive measures have been employed, the incidence of fractures has been reduced. Recently we have been combining both methods of prevention. We have also tried using subconvulsive doses of metrazol in order to eliminate injuries but the psychiatric results obtained have been rather discouraging.

To date our records show that 8 per cent of our metrazol patients have sustained compression fractures of the dorsal spine, forming 10.7 per cent of the total injuries. Our statistics disclose that the majority of these injuries took place in patients in whom two factors were prominent, namely, the patient's age and the duration of

Fig. 1. L. R., November 26, 1938

Fig. 2. L. R., April 19, 1939

the psychosis. The older age group together with those patients irrespective of age, suffering with chronic mental illness, were those most commonly affected.

Injuries in these two types of patients can be readily explained. In the older patients the spine invariably shows arthritic and spondylitic changes with a resultant decrease in spinal flexibility. In the chronic patients, with psychoses of long standing, metabolism is frequently disturbed. The decalcification that takes place again results in a decrease in the strength of the bony framework. Incidentally we have found that the dosage of the drug and the weight of our patients bear no relation to these injuries.

In some of our earlier cases more than one vertebra was found to be injured. Besides compression, a varying amount of decalcification was also seen. A possible explanation for this might be that we had overlooked the original injury and had continued to convulse the patient, thus producing further injury. The decalcification might also be explained partly on the basis of disturbed blood supply.

Another 4.3 per cent of our total injuries include fractures of the scapula, femur, humerus, dislocation of the humerus; monoplegia and muscle strain of the arm. We have found so many dislocated mandibles that we have not made any attempt to include them in these statistics. They do not cause the patient any inconvenience, as they are reduced before he regains consciousness. Other dislocations have also been reduced while the patient is still unconscious, thus eliminating the use of an anesthetic.

In three of our cases, not included in our statistics, we have observed cardiac pathology in the form of precordial pain, systolic apical murmurs and dyspnoea. In all of these patients the symptoms were transitory, disappearing upon the termination of the shock therapy. In the near future we are planning to augment the orthodox physical workup with electrocardiagraphic studies. It should be stated that in our series of 187 cases we have had no deaths.

Case Histories

The following is a typical story of compression fracture of the dorsal vertebrae: L. R., a 41-year-old, white, single man who had been suffering from a manic-depressive psychosis with periodic re-

currences for the past 12 years was started on metrazol shock therapy with a dose of 5 c.c. After the second injection the treatment was stopped because the patient complained of extreme back pain. There was exquisite tenderness over the spinous processes of the middorsal vertebrae. An X-ray revealed definite evidence of compression fracture of the fifth dorsal vertebra. The anterior half of the body was reduced to about one-half the normal width. The fourth dorsal also showed some fracture of the upper articular plate, causing slight compression. (Fig. 1.) Since this patient was uncooperative the treatment outlined above could not be instituted but a checkup radiograph (Fig. 2) revealed the injury to be healed with no deformity.

It is noteworthy here to state that in some of the uncooperative cases, although no clinical deformity was seen, checkup radiographs have revealed further compression and decalcification.

The second case, characteristic of another type of injury, occurred in M. L., a single white woman, age 33, who had suffered with dementia præcox for five years. After her fifth injection the patient complained of pain and limited motion in her left arm and shoulder. An X-ray revealed a fracture along the anatomical neck of the humerus. The main fragments were not separated and showed very little deformity other than slight impaction, but there was a large "sliced" fragment coming from the head of the humerus, lying between it and the glenoid fossa. (See Fig. 3.) It was necessary to operate, exploring the left shoulder joint and removing the loose fragment (Fig. 4). From the operation the patient made an uneventful recovery. Metrazol shock therapy was again instituted, the patient receiving 14 more injections without further injury.

Figure 5 is a radiographic picture of the dorsal spine of S. P., a 34-year-old psychoneurotic, white male, the first case of compression fracture of the dorsal vertebrae coming to our attention. Note the compression in the fourth, fifth, sixth, seventh and eighth dorsal vertebrae, together with patchy decalcification and erosion of the anterior portion of the bodies. Note also how easily this picture could simulate a destructive osteitis, multiple myeloma or metastatic malignancy.

Fig. 3. M. L. before operation

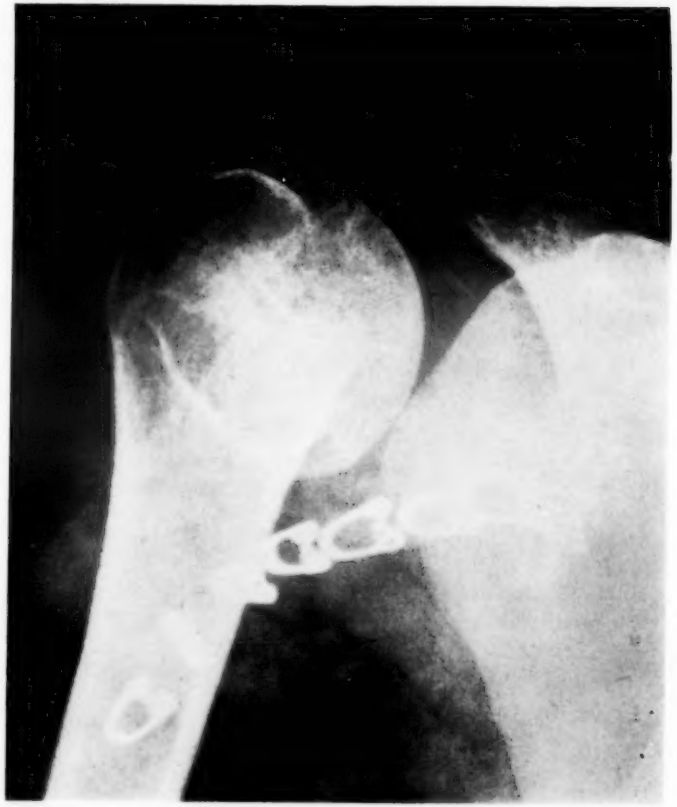

Fig. 4. M. L. after operation

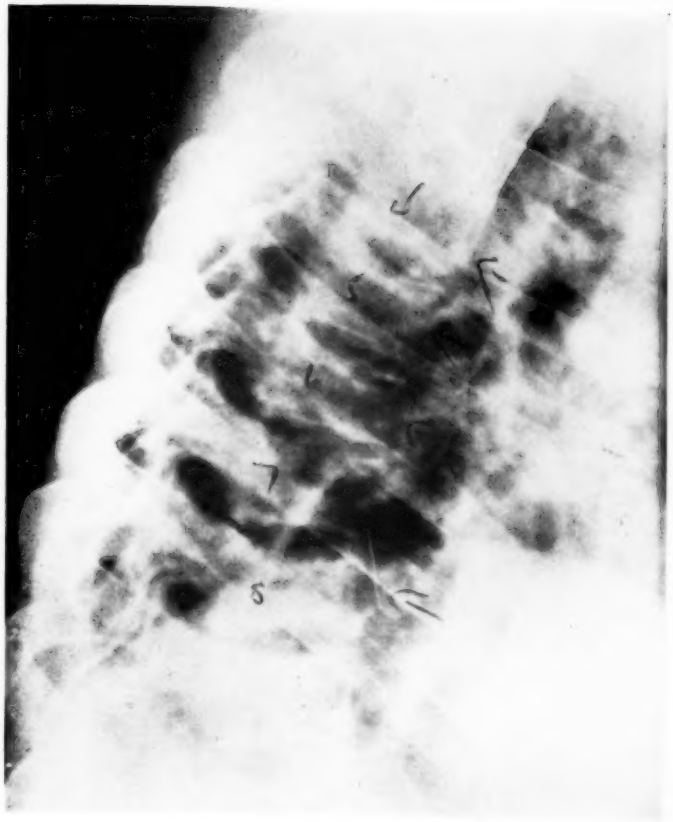

Fig. 5. S. P.

TABLE OF METRAZOL INJURIES

		Age, years				
		10-19	20-29	30-39	40-49	50 and over
Total number patients treated ..	187	26	82	43	26	10
Total number patients injured..	23	0	4	12	3	4
Total number of injuries	28	0	4	17	3	4
Convulsions causing accident:						
First	6	0	1	3	0	2
Second	3	0	0	1	1	1
Third	2	0	0	1	1	0
Fourth	7	0	3	3	1	0
Fifth	4	0	0	3	0	1
Tenth	1	0	0	1	0	0
Eleventh to thirty-sixth	0	0	0	0	0	0
Duration of psychosis:						
Acute cases, 1 to 6 months..	3	0	0	2	1	0
Subacute cases, 6 to 18 months	6	0	1	3	1	1
Chronic cases, 18 months and over	14	0	3	7	1	3
Type of injury:						
Fracture of left scapula....	1	0	0	1	0	0
Fracture of neck, right femur	1	0	1	0	0	0
Fracture of right humerus..	1	0	0	1	0	0
Chip fracture of head, left humerus	2	0	1	1	0	0
Dislocation, left humerus ..	1	0	0	1	0	0
Monoplegia, left arm	1	0	0	0	1	0
Muscle strain, left arm	1	0	0	1	0	0
Fracture of second dorsal vertebra	2	0	1	1	0	0
Fracture of fourth dorsal vertebra	3	0	0	3	0	0
Fracture of fifth dorsal vertebra	4	0	0	1	2	1
Fracture of sixth dorsal vertebra	6	0	0	4	0	2
Fracture of seventh dorsal vertebra	4	0	1	2	0	1
Fracture of eighth dorsal vertebra	1	0	0	1	0	0

	Percentage total
Patients injured	12.3
Injuries sustained	15.0
Vertebral injuries	10.7
Patients with vertebral injuries.....	8.0
Acute cases treated	51.1
Subacute cases treated	20.0
Chronic cases treated	28.9

In conclusion one may say that the encouraging results obtained with this type of therapy, together with the relatively low percentage of injuries, justifies its continued use in psychiatry.

New Jersey State Hospital
Marlboro, N. J.

REFERENCES

1. v. Meduna, L. (Budapest): Die Konvulsionstherapie der Schizophrenie. Psych. neur. Wschr., 37:317, July, 1935.
2. Polatin, Phillip, Friedman, Murray M., Harris, Meyer M., and Horwitz, William A.: Vertebral fractures produced by metrazol—induced convulsions. J. A. M. A., Vol. 112, 1684, April 29, 1939.

MALARIA THERAPY FOR THE NONHOSPITALIZED CASE OF NEUROSYYPHILIS

(*Malaria Therapy in the Community*)

BY WALTER A. THOMPSON, M. D.

The interest of the writer was recently directed toward the problem of nonspecific (fever) treatment of cases of neurosyphilis without psychosis. In the past such cases have had to be content with specific (drug) therapy unless some special arrangement was made for fever therapy. It occurred to the writer that a plan could be devised whereby patients with asymptomatic neurosyphilis could receive malaria treatment. Rosanoff[1] has stated that there is one measure in the prevention of general paresis that has not been adequately provided for, namely, fever treatment. He feels that it should be used in those cases of syphilis in which there is evidence of involvement of the central nervous system and in which there is danger of eventual development of paresis.

It may be of some interest here to point out the incidence of the asymptomatic form of neurosyphilis. O'Leary[2] has shown that 13.5 per cent of cases of syphilis fall into this group. He pointed out further that in 14 per cent of asymptomatic neurosyphilitic cases the blood reports were negative while the spinal fluids were strongly positive. Kirby[3] believed that in many cases abnormal spinal fluids are present for a long time before the appearance of mental or neurological symptoms.

A short time ago there was admitted to the Rockland State Hospital a young, married female who had been receiving specific treatment for syphilis administered by her private physician. Her blood and spinal fluid serological findings were those usually associated with general paralysis. She had been treated for some time with the usual therapy of a bismuth preparation and tryparsamide. Finding that progress was not rapid in the reduction of the Wassermann reaction, and feeling that fever therapy was the treatment of choice, the physician advised the patient to apply for admission to the local State hospital, the only hospital in the vicinity which provided such treatment. She made a voluntary application and was admitted. On admission the usual mental examination was

made with totally negative results. The patient was eager to have malaria therapy and was willing to be admitted to the State hospital for such treatment; financially she could not afford treatment in a private mental hospital nor in a general hospital, even if one had been available.

In California[1] such a patient may be referred to a state hospital by a private physician or health officer for malaria inoculation. Immediately following such inoculation he may return to his home, where he is to remain under the care of his physician, or may go to a private hospital or sanatorium. It is with the former that the writer is particularly concerned.

In adopting such a plan, one may first consider the danger of the spread of the disease (malaria). It is now generally accepted and practised that the disease as used for the treatment of syphilis cannot be transmitted by the bite of the mosquito. Kirby,[3] one of the earliest in the United States to take up this form of treatment, showed in 1926 that experiments had been performed which tended to prove that the possibility of transmission by the anopheles mosquito was relatively small. This was due to the fact that the sexual cycle of the life of the therapeutic parasite was destroyed; thus, the mosquito is rendered unable to transmit malaria.

In the aforementioned hospital no protective devices are now used to prevent spread by the mosquito, although when the treatment was first used patients were kept in isolation, behind screened doors and windows, and were not allowed to mingle with other patients. Now, however, they are allowed free movement and no attempt is made to have a mosquito-free room.

There would necessarily have to be a close relation between the patient and the private physician, but this would be achieved by the requirement that the patient be referred for treatment by either a health officer or private physician. It would appear that reference by a health officer would be comparatively rare, but when such a patient was returned to the community, it would be necessary for the health officer to take charge of the further care and treatment unless the case were turned over to the private physician. The state hospital physician who has control of the treatment in the hospital could offer advice for such further care whenever requested. It is possible that many practising physicians have had

no experience with malaria and they would, no doubt, appreciate the aid of one experienced with the therapeutic use of the disease.

Complications may be a deterrent to such a plan but the writer feels more or less certain that there would not be more complications than are ordinarily found within a hospital fever service. From personal experience the writer knows that these are few and infrequent and in large part are eliminated by selection of comparatively healthy patients. It would appear that the risk with nonhospitalized patients would be less than with the hospitalized case, inasmuch as the former are symptom-free and would be capable of complaining subjectively.

To mention the more common complications, jaundice and anemia may be noted. These are very easily managed. In addition, Bunker and Kirby[4] mention convulsions. It may be speculated whether convulsions are a complication of the malaria or of the neurosyphilis, but the writer is inclined toward the latter opinion. The above authors showed that five of their cases had convulsions before treatment; of these all had one or more during treatment. Besides this, two who had not had convulsions prior to treatment developed them during it. They do not state how advanced was the disease process in each case, but the writer feels that in early cases, especially those without neurologic or mental symptoms, convulsions will be rare. Kirby[3] states that pathologic examination of the brains of those who died during malaria therapy showed unusual mildness of the luetic process; the inflammatory exudate was slight in amount, few plasma cells were found and the pia contained little exudate. He further states that "a study of our pathological material does not permit us to confirm the claim made by others that there is a marked increase of the inflammatory exudate in the brain of cases dying during or immediately after malaria treatment."

At this late date it is perhaps useless to indicate that malaria (fever) therapy is necessary as treatment for general paresis. As long ago as 1926, and I will quote Kirby[3] again, "if tryparsamide and malaria have such beneficial effects in full-blown and even advanced cases of general paresis, one may expect to get immensely better results in the early or preparetic stage of the disease. Where the prospect for permanent arrest or recovery would be greatly in-

creased . . . it is to be hoped that we may soon see the main issue shift to the *prevention* of general paralysis rather than its arrest or cure." (Our italic.) But here, nearly fifteen years later, few such steps have been taken in New York and the writer hastens to suggest a means of doing what has been recommended. Further, Kirby, quoting Fordyce, states that the surest way to prevent general paresis and other forms of neurosyphilis lies in the adequate treatment of early symptoms. The adequate treatment is tryparsamide, bismuth and malaria (fever) therapy. Bunker and Kirby[5] stated in 1920 "we can scarcely help thinking that the considerably earlier treatment of these patients (general paretics) would have produced a notably larger proportion of therapeutic results of the maximum order." O'Leary[2] claims that it was found necessary to adopt the more strenuous therapeutic programs and frequently to employ both specific and nonspecific therapeutic agents in order to reverse the tests (Wassermann) to negative. He states further that of 82 patients who did not respond to other therapeutic measures, 19.5 per cent gave negative results on examination of the spinal fluid in the fifth year following the course of fever.

In conclusion, this method of dealing with cases of asymptomatic neurosyphilis is recommended. To repeat, it should be possible for individuals with the serological findings of general paresis but without the mental or neurological signs and symptoms of this disease, to be referred to a State hospital by a physician, for inoculation with malaria. Upon being inoculated, the individual would be allowed to return to his or her home where the referring physician would take over control of further care and treatment. It would be a necessity that the patient remain in the home until discharged as recovered from the malaria by the physician in charge of the patient. Inasmuch as danger of transmission seems remote this method appears to be a logical procedure. It also relieves the State of a burden of expense, prevents the patient from acquiring the stigma of State hospital residence, if any, and extends the usage of this very acceptable form of treatment to the preventive field. The writer avers that many more cases would be treated under this plan than under that requiring hospitalization.

Rockland State Hospital
Orangeburg, N. Y.

REFERENCES

1. Rosanoff, Aaron J.: Syphilis in state hospitals. California Department of Public Welfare, Sacramento, March, 1939, 18:23.
2. O'Leary, Paul A.: The significance of asymptomatic neurosyphilis. N. Y. State Jour. of Med., July 1, 1939, pp. 1303-1308.
3. Kirby, George H.: The treatment of general paralysis with special reference to tryparsamide and malaria treatment. STATE HOSPITAL QUART., August, 1926, pages 1-28.
4. Bunker, Henry A., Jr., and Kirby, Geo. H.: Treatment of general paralysis by inoculation with malaria. J. A. M. A., February 21, 1925, Vol. 84, pp. 563-568.
5. Bunker, Henry A., Jr., and Kirby, Geo. H.: The place of malaria in the treatment of general paralysis. Bull. N. Y. Acad. Med., Series II, 1928, Vol. IV, pp. 307-322.

SCHIZOPHRENIC "DETERIORATION"

BY SAMUEL R. LEHRMAN, M. D.

Deterioration is the one symptom of the so-called functional psychoses which from the time of Kraepelin has been considered pathognomonic of dementia præcox. Kraepelin,[1] Meyer[2] and others have actually used the phrase *deterioration process* as synonymous with dementia præcox. This implies a more or less complete understanding of the disease, for when the word deterioration is defined the broad meaning of dementia præcox becomes clear.

Webster's dictionary[3] defines deterioration as the "state of growing worse." The Psychiatric Word Book[4] calls it "a progressive impairment of intellect, memory and emotions"; the synonym is "dementia." Rosanoff[5] too defines "mental deterioration" as a "permanent impairment or loss of mental function resulting from mental disease." That there are permanent irreversible changes is definitely stated. Meyer's[3] description of dementia præcox ("unfinished or chronically subefficient action, a life lived apart from the wholesome influence of companionship, a concrete test and finally a progressive incongruity in meeting the inevitably complex demands of the higher instincts, this is practically the formula of the deterioration process") makes equally definite the dynamic concept of progression in a "worse" direction. Thus by definition, deterioration assumes a "progressive worsening" involving irreversible changes.

Bleuler upset the apple cart, however, in 1911[6] with his conception of schizophrenia as summarized later in his textbook: "The prognosis of an attack of dementia præcox is really not always bad since in very many cases after the exhaustion of a shift, only slight changes of the psyche call attention to the disease . . ." "This disease may come to a standstill at every stage and many of its symptoms may clear up very much or altogether; but if it progresses it leads to a dementia of a definite character."[7] Since Bleuler's epochal papers there has been a good deal of loose thinking with reference to schizophrenia. In the New York State Department of Mental Hygiene this word is used as if it were synonymous for dementia præcox.[8] However one often hears or reads a description of Kraepelin's dementia præcox (Meyer's "deterioration pro-

cess") as applied to one of Bleuler's nondeteriorated schizophrenics. In 1932 May[9] called attention to this problem and Boisen[10] only recently noted that the criteria for the classifications of dementia præcox differ not only in different countries but in different states and even in different hospitals within the same state! May remarks that "Kraepelin's original description of dementia præcox as essentially a deteriorating process is diametrically opposed to the theories later advanced by Bleuler," and pleads for a "definite agreement as to what constitutes dementia præcox and how it is to be defined."

Although May's paper was a good review of the various conceptions of schizophrenia it made little attempt to reconcile the German and Swiss theories. As a matter of fact the schizophrenic process is never entirely deteriorating—and when evidence of deterioration is present, it is more apparent than real. Bleuler[11] pointed out that a "chronic" disease, such as tuberculosis, can be progressively deteriorating in one patient and progressing toward recovery in another. This point was hinted at even earlier by Jung[12] who postulated the presence of a psychogenic *toxine* which was the basis for the irreversible deterioration—an idea that was inspired, doubtless, by Bleuler and the then new psychoanalysis. Certainly it contains the germ of the psychosomatic view of schizophrenia which has more recently been encouraged by Jelliffe[13] and others. Jelliffe believes that every psychosomatic process is reversible up to a certain point and Bleuler admitted that "the disease (dementia præcox) might come to a standstill and many of the symptoms clear up altogether."

The cases presented in this paper tend to agree with the latter conceptions. In each case a process leading to deterioration seems to have begun, reached an impasse and then attempted a return from the psychosis. There was a continuation of a dynamic process but a reversal of direction. If this conception should prove to be correct, and one must admit that the evidence is merely clinical, then it is time to alter the definition of deterioration or to cease applying it to schizophrenia. The idea of *permanent impairment* will be applicable only to the organic psychoses, and Meyer's conception must be qualified. It is felt by this writer that Kraepelin, Hoch and others must have suspected the reversibility of the schizo-

phrenic process. For despite Kraepelin's extremely rigid criteria for recovery, even he admitted a definite percentage of recoveries in dementia præcox. Further, it has been implied recently[14] that Hoch's concept of benign stupor might have been an attempt to reconcile recoverable catatonia with the Kraepelinian conceptions of Hoch's day. It should be borne in mind that much valid psychiatric opinion never gets into print possibly because it *is* opinion and incapable of concrete proof (for example, the belief currently held by some psychiatrists, but first advanced by Stärke,[15] that there is only one functional psychosis and that there is no fundamental difference between dementia præcox and manic-depressive psychosis).

Bigelow[16] is of the opinion that intellectual deterioration never occurs in schizophrenia except as a function of deterioration in the emotional sphere.* He too feels that the term "deterioration" is rightly applicable only to the organic psychoses and suggests the psychoanalytic concept of "regression"[17] for schizophrenia. That other psychiatrists have long questioned the "deteriorating process" in schizophrenia is attested to by the humorous definition which has arisen anonymously in the State hospitals, to wit: "Schizophrenia is a chronic deteriorating disease which is not always chronic and not always deteriorating." In spite of these definite trends toward a revision of the meaning of dementia præcox there is a seeming reluctance to part with the cliché deterioration. Even May, at the close of his discussion of The Dementia Præcox-Schizophrenia Problem concludes that all of these types end "eventually in a partial or complete deterioration"!

The following cases are examples of schizophrenia in which there has appeared little, if any, real (that is irreversible, progressive) deterioration. The patients are all males 60 years of age or over. Although they are still on the books of the hospital they are for the greater part either on parole from the hospital or residing on parole wards. Several are on locked wards because of physical infirmities, but it should be emphasized that these individuals are comfortable mentally.

*Malamud and Palmer (Intellectual Deterioration in the Psychoses; Arch. Neur. and Psychiat., Vol. 39, No. 1, Jan., 1938) conclude that in organic and functional psychoses "the most prominent feature in the deterioration is disturbance of activities requiring the directional control of thought. More specifically . . . in schizophrenia failure occurs most frequently in those tests in which performance is most heavily dependent on practical judgment . . ." These findings are adequately explained by the symptom of preoccupation alone.

Case Reports

Case 1. J. W. P. Single, temperate, age 67. Diagnosis: dementia præcox, hebephrenic type.

This patient had a psychotic aunt in the maternal line. He had been scalded about the face as a child but his early development is said to have been normal. He had little schooling but was considered bright. At an early age he began working in his father's grocery store and later worked elsewhere. At the age of 24 he lost his job for "inattention" and returned to his father. There was nothing unusual in his behavior for the next seven years except for his seclusiveness. At the age of 31 he suddenly became violent and threatened to kill his father. There were also somatic and persecutory delusions as well as visual and auditory hallucinations. He was treated intermittently in a private sanitarium for two years and was finally admitted to the Utica State Hospital at the age of 33. He stated that he was worried over nocturnal emissions. For the next 10 years his behavior was essentially unchanged. He received the news of his father's death in 1914 (age 42) without emotion but shortly after this event he improved considerably and was transferred to a parole ward where he was described as quiet and efficient although still hallucinated and delusional. For 15 years (up to age 57) he was described as quiet and industrious withal hallucinated and delusional. In 1935 (age 63) he was described as "deteriorated," yet three years later (1938, age 66) he was much improved. He was placed in a boarding home March 29, 1939; there he made an excellent adjustment and was paroled October 1, 1938. He is receiving old age assistance and appears at the present time to be free from hallucinations.

Comment: On several occasions this patient was described as "deteriorated" yet there occurred at a late age a recovery from hallucinations and an extramural adjustment. Practically speaking, society has not benefited particularly by this recovery but scientifically the fact remains that the deterioration was neither continuous nor entirely permanent. It is of interest to note that some improvement occurred shortly after the patient's father died. This event may have had an influence on his castration complex. Similarly, the waning of sexual potency with advancing age may have influenced the course of the psychoses. (For a fuller discussion see references 18 and 19.)

Case 2. F. J. T. Separated, intemperate, age 65. Diagnosis: dementia præcox, hebephrenic type.

This patient's paternal grandfather, maternal aunt and sister were psychotic. There was nothing significant in the personal history other than

that he had few friends. His present illness began following a separation from his wife (details unknown). He began to drink to excess, became more seclusive and drifted from job to job. He was admitted to a United States Army hospital, July 26, 1919 (age 43) when he exhibited hallucinations, delusions, elation and irritability. He was transferred to the Utica State Hospital six months later. The examination on admission revealed auditory hallucinations of a sexual and religious nature. He improved considerably a short time after his admission and was paroled on August 22, 1920 (age 44) only to be returned because of intoxication and assaultive behavior. Since that time he has been paroled almost yearly, to be returned shortly afterward for the same reasons. As recently as 1936 he was described as being "simple and hallucinated." On September 18, 1937, he went to live with his sister and since then it has not been necessary to return him to the hospital. He drinks only occasionally and is free from hallucinations except when drinking.

Comment: The schizophrenic process in this case appears to be fluctuating. A year after his admission the "progressive worsening" seemed to have reached a standstill and following this the patient's condition varied. It is wondered if the alcohol had a beneficial effect in helping him to maintain his admittedly precarious adjustment.

Case 3. J. H. Single, intemperate, age 67. Diagnosis: dementia præcox, hebephrenic type.

Psychotic relatives in this patient's family included a brother, an aunt and a cousin. His birth and early development were not remarkable. He was considered "dull" and had had little schooling. His first admission was to the Buffalo State Hospital, December 5, 1910 (age 38) but he was discharged in three weeks. At that time he was diagnosed "without psychosis, inebriate." His second hospitalization—at the Richmond (Va.) State Hospital—occurred on February 26, 1924 (age 52). After four months he was discharged with the diagnosis "without psychosis, mental deficiency." Following this he roamed about the country begging, doing odd jobs and becoming intoxicated. He was picked up by the State police and admitted to the Utica State Hospital for observation, November 28, 1929 (age 56). He denied hallucinations and delusions but was extremely superficial with rambling, illogical production concerning the "cosmos." He was presented as a case of simple dementia præcox but the majority of the staff agreed on a diagnosis of dementia præcox, hebephrenic type. The physician who summarized the case said: "He will probably be an institutional case for the rest of his life." His general mental condition did not improve for many

years. In 1930 he was described as "deteriorated" and a note of January 17, 1936 (age 64) reads "Deterioration is well marked." However, on September 10, 1936, he was transferred to a parole ward. A year later he was described as hallucinated but "quiet, agreeable and an efficient worker." In January, 1939 (age 68) he was free from hallucinations but mildly confused. On March 29, 1939, he was placed in a boarding home where he has made an excellent adjustment. He is satisfied with the home and the foster family is pleased with him. He is described as neat and clean, and apparently free from hallucinations.

Comment: This patient's basic limited intellectual endowment may have been mistaken for deterioration. Thus the problem of pfropfschizophrenia arises. The role of alcohol in the mechanism of the psychosis or its arrest is also problematical.

Case 4. A. G. P. Single, temperate, age 65. Diagnosis: dementia præcox, hebephrenic type.

This patient's family history is negative for nervous or mental disease. He was a frail, awkward child and was badly burned at the age of nine years. He was described as seclusive and a "poor mixer." Although he never kept company with the opposite sex it is said that he "lived with his housekeeper" who was many years older than he. His psychosis began at the age of 51 three years before admission. He began to have ideas of telepathy and thought he was influenced by a woman clairvoyant. At this time he was employed as janitor in a school. His bizarre sexual trend eventually brought about his admission to the Utica State Hospital on July 24, 1928 (age 54). There was no mental change until June, 1931 (age 57) when enough improvement was noted to warrant his transfer to a parole ward. In the course of the next few years he was transferred several times to a locked ward because of "silliness, confusion and delusions" only to be returned to a parole ward following improvement. On May 5, 1937 (age 63) he was placed in a boarding home where he remained for two years. On June 30, 1939, he was paroled to the custody of this foster family. His excellent adjustment continues to date, in that he is described as "pleasant, agreeable and free from delusions."

Comment: The trauma in childhood and the evidences of oedipal fixations require no comment. It is interesting to note that this patient kept his job during three psychotic years that preceded his admission. In this case there is no evidence of deterioration but rather of regression.

Case 5. C. H. S. Single, intemperate, age 65. Diagnosis: dementia præcox, hebephrenic type.

There is nothing unusual in this patient's family or early history other than that he was overdependent upon his mother. His psychosis began in 1908 (age 34) and is linked to a urethrotomy performed in that year because of a gonorrheal stricture. He became seclusive, hallucinated and delusional. He began to see many women on his clothing and around him. He would often become violent and swear at them. He was transferred to the Utica State Hospital May 20, 1920 (age 46) where he soon learned to make a compromise with his hallucinations and delusions and was accordingly transferred to a parole ward within a short time. Since then there has been no further progression of the psychosis. The patient continues to reside on a parole ward. He is an excellent worker and is fairly tidy in his appearance. There is no intellectual impairment.

Comment: This case is an example of a compromise with the psychosis: what Bryan[20] calls a "hospital adjustment."

Case 6. H. G. J. Single, temperate, age 77. Diagnosis: dementia præcox, hebephrenic type.

This patient's family history is essentially negative. His birth and early development were not remarkable except that he was overdependent on his mother and sister. He was first admitted to the Utica State Hospital, September 12, 1896 (age 34) and was discharged as recovered November 8, 1899. His family stated, however, that he never recovered. Nevertheless he remained outside the hospital until August 25, 1923 (age 61), when he was readmitted with hallucinations and delusions of a sexual nature directed against his mother and sister. Shortly after admission he was transferred to a parole ward, where he has remained ever since. He has been extremely industrious until recently when failing physical health interfered with his activities. In 1932 (age 70) he was described as "deteriorated" but on April 4, 1938, he was considered to be satisfactory for placement in a boarding home. Unfortunately this could not be arranged.

Comment: It is possible that this patient could have been spared readmission to the hospital had he not been discharged to the locale of his oedipal conflicts. In any event there was no progressive deterioration.

Case 7. L. C. Single, temperate, age 61. Diagnosis: dementia præcox, hebephrenic type.

This patient's father and paternal grandparents were alcoholic; his mother was "psychopathic." Despite an unsatisfactory home environment there was nothing unsual in his development until he reached the age of 18. At this time he was indulged by a wealthy man who taught him sexual perversions, "kept" him for a year and a half and then deserted him. Fol-

lowing this he became irritable and delusional. He was not admitted to the hospital, however, until 1918 (age 40). He was discharged in 1921, readmitted in 1925, again discharged in 1927 and finally readmitted March 26, 1928 (age 50). The last admission was attributed to his mother's death and his father's desertion. It was characterized by seclusiveness, untidiness, hallucinations and delusions. One year after this admission he was transferred to a parole ward where he has remained ever since. At present he is described as "an efficient worker, neat and clean," although he is still seclusive and hallucinated.

Comment: This is another instance of a compromise with the psychosis. No doubt this patient too could have been spared a return to the hospital. The infantile sexual elements are particularly significant.

Case 8. G. L. K. Single, temperate, age 66. Diagnosis: dementia præcox, hebephrenic type.

This patient's family history is negative except for an alcoholic father. He is said to have had a normal early development. He was admitted to the Utica State Hospital, February 18, 1909, because of his threats to, and attacks on, his mother and sister. The informant stated that this behavior had been going on for five years. The patient continued to have periods of excitement with destructiveness and exhibitionism for over 20 years after admission. In 1928 (age 55) he was described as "deteriorated." In 1934 (age 61) he was transferred to a parole ward from a so-called deteriorated ward and in 1938 he was described as "slightly improved." At present he is satisfactorily employed and free from excitements. He claims that his hallucinations do not disturb him.

Comment: Here is another recovery from deterioration occurring with advancing age. One wonders again about the relationship between waning sexual power and a tendency toward recovery. The oedipus complex is also evident.

Case 9. E. S. Single, intemperate, age 63. Diagnosis: dementia præcox, hebephrenic type.

This patient presents a negative family history. He was willful and refused to work. When his funds failed he discontinued his studies at Union College but did not curb his spending. Following his mother's death in 1907 (age 31) he bought a home with part of his inheritance and lived there with a woman who had been a family servant for years. When the legacy was gone he became dependent upon his brothers and sisters. He was admitted to the hospital, August 4, 1925 (age 49) but it was stated that he had begun to act queerly shortly after his mother's death. He became a lay

preacher, was converted to abstinence and became seclusive although he visited his sister daily. His admission was occasioned by undue fears, excitement, hallucinations and grandiose delusions. There was no change in his mental condition until 1928 (age 52) when he was described as "deteriorated." In 1930 (age 54) it is noted that he showed "memory defects." In 1936 he was again described as "deteriorated" but at the present time he resides on a parole ward, is satisfactorily employed, and is neat and clean in appearance. It is noteworthy that careful examinations reveal a clear sensorium and good memory.

Comment: This is still another case showing evidence of an unadjusted oedipus complex and an apparent recovery or arrest of the "deteriorating process."

Case 10. F. P. N. Single, temperate, age 64. Diagnosis: dementia præcox, hebephrenic type.

There is no history of nervous or mental disease in this patient's family. His early life is not remarkable. He had one mental episode in 1913 (age 38) from which he apparently recovered. He was admitted to the St. Lawrence State Hospital, October 7, 1916 (age 41) where he remained until his transfer to the Utica State Hospital, September 23, 1921 (age 46). His trend consisted of vague fears of harm; auditory, visual and tactile hallucinations, and irritability with tendency to assault. He was also markedly seclusive. The patient resided on a parole ward and was satisfactorily employed from 1922 (age 47) to 1934 (age 59), when he became rather destructive, requiring a change of ward and of employment. A note of November 11, 1935 (age 60) describes him as "deteriorated." One year later however he had improved sufficiently to be considered for parole. At present he admits hallucinations but is apparently little bothered by them. He is an excellent worker and is profitably employed at ward work. He is neat and clean in appearance and shows no evidence of progressive deterioration.

Comment: This case too may well be an example of a compromise with the psychosis.

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The first 10 cases comprise the group of hebephrenics who were expected to deteriorate rapidly. The remaining 10 cases are classified in the paranoid type of dementia præcox. In view of their similarity and in order to conserve time and space, a table has been compiled presenting each case in briefer outline.

Reference to this table reveals that in nearly every case the delusions and hallucinations persisted. Nevertheless there was rarely any definite evidence of "deterioration."

Cases	Present age	Age at admission	Family history	Previous episodes or admissions	Social status	Past history	Symptoms	Course in hospital	Present status
Case 11 R. R. C.	60	27 (1906)	Neurotic (f) mother	None	Single, temperate, excellent student	Worried over a girl friend	Seclusiveness, preoccupation, hallucinations, paranoid delusions	In 1907 described as "restless, deteriorated," on parole ward at that time, no change since then	On parole ward where he is secluded, hallucinated, delusional and preoccupied, careful examination shows no intellectual impairment
Case 12 J. G.	79	45 (1905)	Paternal aunt psychotic	Psychosis began 5 years before admission	Married, temperate, average intelligence	Not remarkable	Severe headaches, paranoid attitude toward wife, fear that people were shooting at him, auditory and visual hallucinations, assaultiveness	Transferred to farm colony 1911, "deteriorated" 1918, memory defects 1923, transferred to parole ward 1930, satisfactorily employed in horse barn 1938.	Recently retired from employment because of age and physical infirmities, continues hallucinated but is neat and clean
Case 13 L. H.	61	31 (1911)	Negative	Psychosis began 4 years before admission	Single, temperate, average intelligence	Disappointed in love, gradually became secluded	Guilt feelings over masturbation, ideas of incest with mother, assaultiveness, paranoid trend, hallucinations	Satisfactorily employed but described as deteriorated and on locked ward until 1923 when he was transferred to a parole ward	On parole ward, quiet, agreeable, cooperative, neat and clean, satisfactorily employed, continues hallucinated
Case 14 W. J. F.	62	30*	Negative	Depressed, unclean for 2 years prior to admission	Single, temperate, average intelligence	Unknown	Refusal to eat, preoccupation, seclusiveness, dullness, indifference, hallucinations, paranoid delusions	Unchanged until 1918 when he was described as "deteriorated," with a sexual trend, parole ward 1920, satisfactorily employed at occupational therapy department	On parole ward, one of the best workers at the occupational therapy department, neat and clean, hallucinated, and secluded except with physicians

*(1907—Central Islip State Hospital, transferred to Utica State Hospital, 1915; age 45.)

Cases	Present age	Age at admission	Family history	Previous episodes or admissions	Social status	Past history	Symptoms	Course in hospital	Present status
Case 15 H. Y.	66	54 (1927)	Negative	Ideas of reference pertaining to homosexuality 5 years before admission	Single, intemperate, average intelligence	Seclusive	Attempted intimacies with strange women, hallucinations, paranoid delusions, ideas of reference	Although hallucinated and delusional he has been comfortable and on a parole ward since 1929, is a good worker, and tidy	On parole ward, extremely tidy and pleasant, hallucinated and delusional but a good worker
Case 16 C. A. W.	63	47 (1923)	Negative	None	Separated, abstainer, average intelligence	Married at age 25, deserted wife and 4 children at 32 years of age, deaf	Hallucinations, paranoid trend. Following robbery in church where he was a janitor he became afraid that people accused him of the theft	Transferred to parole ward 5 months after admission where he is quiet, industrious, and efficient but hallucinated, delusional and paranoid	On parole ward, efficient worker, neat and clean, continues hallucinated
Case 117 J. M.	72	58 (1926)	Mother unstable	Previous admission in 1923 (age 55)	Widower, abstainer, average intelligence	Not remarkable	Hallucinations, delusions, overactivity, overreligiousness, paranoid trend	Two years after admission he was described as "deteriorated," considered best worker on road party when transferrred to parole ward in 1935, continued hallucinated	On parole ward, excellent worker but hallucinated, paranoid and delusional, at times noisy
Case 18 J. M.	74	70 (1935)	Negative	Psychosis began 9 years before admission	Separated, intemperate, average intelligence	Left home at onset of psychosis 9 years before admission	Hallucinations, delusions, paranoid trend, (complained to police about persecutors) sensorium intact	Parole ward about 6 months after admission, quiet, cooperative, a good worker, although hallucinated, delusional and paranoid	On parole ward, quiet, cooperative, neat, clean and a good worker although delusional and hallucinated, has never been described as "deteriorated"

Cases	Present age	Age at admission	Family history	Previous episodes or admissions	Social status	Past history	Symptoms	Course in hospital	Present status
Case 19 G. H.	65	37 (1911)	Negative	None	Single, intemperate, average intelligence	Threats and attempts to kill father, mother and sister led to admission	Persecutory complaints based on hallucinations, irritability, destructiveness	No improvement until 1926, following a severe attack of jaundice, he became less belligerent and was transferred to a parole ward, still hallucinated and delusional	On parole ward, hallucinated and delusional, but a good worker, neat and clean, there are no evidences of deterioration
Case 20 N. P. S.	68	35†	Negative	None	Single, abstainer, average intelligence	Not remarkable	Hallucinations, seclusiveness, dullness, suspiciousness, paranoid delusions	Patient appeared to benefit by his transfer to the Utica State Hospital, parole ward in 1916, considered quiet and industrious although hallucinated, reported "deteriorated" in 1930 (age 59), boarding home in 1936	On parole, patient made a satisfactory adjustment at his boarding home and was accordingly paroled June 30, 1939, he is free from hallucinations and delusions and is neat and clean, there are no evidences of deterioration

†(1906—Admitted to Manhattan State Hospital, transferred to Utica State Hospital, 1915; age 44.

Discussion

Two facts emerge strikingly from a study of these cases. One is that deterioration is not predestined in schizophrenia and the second is that the schizophrenic process is not irreversible. Thus it must be noted again that the word *deterioration* which was first used by Kraepelin and subsequently by Meyer and others as synonymous for *dementia præcox* cannot correctly be applied to schizophrenia. These observations are not new. Bleuler stated in 1911 that the deteriorating process is not the important issue in schizophrenia. More pertinently P. Chaslin emphasized in 1912 "the reversibility of the discordant reaction, and the possibility but not obligatoriness of the dementia" (Muncie[21]). As a matter of fact the French school has shown the most progressive attitude toward the problem. Claude, Minkowski[21] and others have modified Bleuler's teaching and placed their cases in three separate categories: one group represents a constitutional anomaly, the second a reversible reaction and the third an irreversible process. Muncie[21] writes of deterioration as follows (p. 350): "In old cases a certain deterioration of the assets may be granted, but even then the deterioration appears largely due to a fixation in the preoccupation, lack of interest in external reality and lack of use of old assets. The end result may be a profound loss of the utilization of the assets, for all practical purposes indistinguishable from the actual loss of the assets themselves." This paragraph crystallizes the latest thought on schizophrenia but continues to use the word deterioration even though the latter refers to "'deterioration of assets." May[9] on the other hand appeared unable to free himself from Kraepelinian concepts, for despite his extensive quotations from Bleuler, he ignores entirely the later French writers and concludes that "Dementia præcox, or schizophrenia, is a clinical entity —a psychosis the principal and characteristic features of which may be either: 1. A primary progressive deterioration; 2. An autistic or dereistic withdrawal from the environment; or 3. An intellectual incoordination; all of these types ending eventually in a partial or complete deterioration."

Of course one-half the cases here presented are in the paranoid classification and Kraepelin himself recognized that these cases are

singularly free from deterioration. However, a comparison of the hebephrenic with the paranoid group in this series reveals that the prognosis for recovery (total or partial) was better for the former group. This is consistent with the fact that there was less change in either direction for the latter group. From a dynamic point of view these reactions may be explained by analogy with the functions of any group of muscles. For example, consider the muscles of the arm: These muscles are in a constant state of dynamic tension. Even while the arm is at rest antagonistic tonal impulses act against each other to preserve an equilibrium. So it is with psychic equilibrium. The id forces are constantly opposed by the ego and the superego. The environment and constitution may act on the right side (ego and superego) or on the left side (id). The environment is entirely variable; the physical constitution flexible within limits. Any interaction of all these factors (and such interaction is continuous throughout life) necessitates a fresh adjustment striving for an equilibrium. A psychosis occurs when the equilibrium (gain of illness) can be attained only to the left of the center and therapy consists of displacing the locus of the equilibrium. (This is in effect a restatement of psychobiologic therapy.)

The mere fact that these 20 cases were taken from the records of active hospital patients at first glance militates against a convincing argument concerning the deterioration principle. However it should be remembered that for the patient residence in a hospital is often preferable to the environment from which he may have come. Thus the mere fact of hospital residence need not be an indication of lack of adjustment. This is a dynamic factor in maintaining the illness which is receiving increasing attention.[20, 22, 23] The problem is intimately linked with relapses following insulin and metrazol therapy. At the present time State hospitals by their very nature are powerless to cope with it. Further, from the statistical side, although these cases consist of only 6 per cent of the total number of schizophrenics on the service, they represent over 90 per cent of those over 60 years. Patients of 60 or over were selected because it was felt that deterioration if present should by then have become well established.

Of all the schizophrenics over 60 there was none of the simple or catatonic type. The simple type may be absent because of its

rarity or because it may evolve in time into the hebephrenic type, leading to recovery or deeper regressions. The absence of catatonics may be explained by the favorable prognosis or on the other hand, their early death when the disorder is continuous, from some intercurrent disease. This may represent the ultimate regression to death.

An interesting problem requiring further comment is that of pfropfschizophrenia. At least one of the patients presented here much resembled a pfropfschizophrenic. In such a case one wonders if deterioration ever does occur, since the level is so low at the outset. Not infrequentlly a basic oligophrenia is mistaken for deterioration. Again where organic defect underlies a functional defect it is often difficult to determine the true nature of the process. The writer would suggest that the measure of regression determines the origin, without overlooking the fact that regression invariably accompanies organic processes. However, organic psychoses show deterioration (irreversibility), functional psychoses do not. The factor of regression is further substantiated by the preponderance of oedipus mechanisms in these cases.

To complete the discussion it should be stated that Bleuler and Jelliffe both imply a measure of reversibility for *organic* processes. (Cf. Bleuler's comparison of schizophrenia with tuberculosis.) They state definitely on the other hand that the reversibility is only partial and is always accompanied by "scarring." This would indicate an arrest of the process rather than a reversibility. Thus there is no inconsistentcy in Bleuler's conception of schizophrenia for he assumes the presence of scarring and in a measure implies that any deterioration which does occur is organic in nature. Jelliffe[13] lends further support to this idea with the psychosomatic interpretation: "Behavior pattern has eaten its way into anatomical pattern and will not be recalled." (p. 81) The future may yet justify Jung's hypothesis[12] but there is room for optimism in the contention that complete reversibility of the schizophrenic process is possible and if organic deterioration does occur there may be a measure of recovery even if with scarring.

Summary

1. The concept of "deterioration" in schizophrenia has been discussed with particular emphasis on the views of Bleuler and Freud, and the French psychiatrists.

2. Twenty case histories have been reviewed as examples of schizophrenia with little or no "deterioration" and with partial recovery.

3. It has been suggested that the word *deterioration* be applied only to organic disorders and that the concept of *regression* replace it in application to schizophrenia. Conversely it may be recalled that regression may accompany the actual deterioration of an organic process. Should it be shown definitely that deterioration occurs in schizophrenia, the process must be considered of organic or psychosomatic etiology.

4. In the course of the study some apparently irrelevant problems presented themselves (for example, the question of classification of schizophrenia, hospital residence and so forth) each of which merits further consideration.

Utica State Hospital
Utica, N. Y.

REFERENCES

1. Kraepelin, E.: Psychiatrie, sixth edition. Johann Ambrosius Barth, Leipzig, 1899.
2. Meyer, Adolf: What do histories of cases of insanity teach us concerning preventive mental hygiene during the years of school life? Psychological Clinic, XI:89, 1908.
3. Webster's Universal Dictionary of the English Language. The World Syndicate Publishing Company, New York, 1936.
4. Hutchings, Richard H.: A Psychiatric Word Book, fifth edition. The State Hospitals Press, Utica, 1937.
5. Rosanoff, Aaron J.: Manual of Psychiatry, sixth edition. John Wiley and Sons, New York, 1927.
6. Bleuler, E.: Dementia Præcox oder Gruppe der Schizophrenie. Franz Deuticke, Leipzig u. Wien, 1911.
7. ——: A Textbook of Psychiatry. Translated by A. A. Brill. The Macmillan Co., New York, 1924.
8. New York State Department of Mental Hygiene: Statistical Guide, eleventh edition, revised. The State Hospitals Press, Utica, 1934.
9. May, James V.: The dementia præcox—schizophrenia problem. PSYCHIAT. QUART., Vol. 6, No. 1, January, 1932.
10. Boisen, Anton T.: Types of dementia præcox—A study in psychiatric classification. Psychiatry, Vol. 1, No. 2, May, 1938.
11. Bleuler, E.: Lehrbuch der Psychiatrie, fifth edition. Verlag Julius Springer, Berlin, 1930.
12. Jung, C. G.: The Psychology of Dementia Præcox. Translated by A. A. Brill. Nerv. and Ment. Dis. Pub. Co., New York, Monograph No 3, 1909.

13. Jelliffe, Smith Ely: Sketches in Psychosomatic Medicine. Nerv. and Ment. Dis. Pub. Co., New York, Monograph No. 65, 1939.

14. Rachlin, Hyman L.: A statistical study of benign stupor in five New York State Hospitals. PSYCHIAT. QUART., Vol. 11, No. 3, July, 1937.

15. Stärke, V.: Quoted by Schilder, Paul, in Introduction to a Psychoanalytic Psychiatry. Translated by Bernard Glueck. Nerv. and Ment. Dis. Pub. Co., New York, Monograph No. 50, 1928.

16. Bigelow, Newton J. T.: Personal communication.

17. Freud, Sigmund: Three Contributions to the Theory of Sex. Translated by A. A. Brill, in The Basic Writings of Sigmund Freud. Modern Library, New York, 1938.

18. Menninger, Karl A.: Polysurgery and polysurgical addiction. Psychoanal. Quart., Vol. 3, No. 2, April, 1934.

19. Feinier, Laurent, and Rothman, Theodore: Study of a male castrate. J. A. M. A., Vol. 113, No. 24, December 9, 1939.

20. Bryan, William A.: Administrative Psychiatry. W. W. Norton and Co., New York, 1936.

21. Muncie, Wendell: Psychobiology and Psychiatry. The C. V. Mosby Co., St. Louis, 1939.

22. Hutchings, Richard H.: Psychotherapy in public mental hospitals. Am. Jour. of Psychiat., November, 1933.

23. Lehrman, Samuel R.: The psychotherapy of hospitalization. PSYCHIAT. QUART., Vol. 13, No. 2, April, 1939.

24. Milici, Pompeo: Pfropfschizophrenia. PSYCHIAT. QUART., Vol. 11, No. 2, April, 1937.

FOLLICULIN MENFORMON (THEELIN) TREATMENT OF INVOLUTIONAL MELANCHOLIA*

BY J. NOTKIN, M. D., B. DENNES, M. D., AND V. HUDDART, M. D.

Introduction

Since 1922, reports have appeared in the literature concerning the use of various ovarian preparations in the treatment of involutional melancholia in women. At the outset the whole or parts of the gland and even extracts of placental tissue were used. With the isolation and standardization of the female sex hormone the treatment became more systematic and less empirical, especially since it could be checked with the content of the follicle-stimulating hormone in urine. Since most of the reports were very favorable we decided to try this form of treatment in a group of institutionalized patients. Before we present our results it may not be amiss to review briefly the reports in the literature.

In 1922 Strecker and Keyes[1] used corpus luteum and fresh ovarian preparation in a group of 14 patients. They have reported recovery in six cases and improvement in four other cases. Reappearance of menses took place in one case. In 1926 Pratt and Allen[2] used follicular hormone in women who had sustained an artificial menopause and have noted an increase in the size of the uterus and slight uterine bleeding following five administrations of the preparation. In 1926 Zondeck[3] induced menstruation in castrated women with the aid of the female sex hormone. Lack of therapeutic results were reported by King and Patterson[4] in 1928; they used corpus luteum and the whole ovary by mouth, and the follicular extract subcutaneously. Two years later Campbell and Collip[5] reported favorable results in sterility and in relative amenorrhea with oral administration of an extract of placental tissue. In 1932 Bowman and Bender[6] treated seven cases of involutional melancholia with an ovarian hormone called "Amniotin." They reported "good social recovery" in two cases; three patients failed to respond to the treatment, and two others died, one of anemia and bronchial pneumonia and the other of carcinoma of the uterus. In one instance a temporary reappearance of menstruation took place.

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Three other patients who were still menstruating at the time when treatment was instituted ceased to menstruate. A fourth patient continued to have her menses for about two months. In 1933 Werner and Collier[7] reported improvement in the symptoms of castration following administration of Theelin to 13 castrated women. A year later Werner[8] and his associates gave a preliminary report on the intramuscular administration of Theelin in 21 patients with involutional melancholia. Twenty other patients were observed as controls. According to their tabulation of symptoms nine patients were psychotic, while the others showed the usual signs and symptoms of autonomic imbalance of the climacteric period. Nine patients showed various degrees of improvement. Of the control group seven were unimproved and one was moderately improved. In 1936 Werner[9] and his coworkers made a second report. Of 21 patients, who were given 1 c.c. of Theelin intramuscularly daily for six months, 13 showed "marked improvement," three "moderate improvement," three "slight improvement;" only two patients, who also had arteriosclerosis, failed to improve. Of 19 control patients, two showed "moderate improvement" while the rest of the group failed to show any change; 18 of the control patients were later treated for a period of six months. Nine among them showed "marked improvement," four "moderate improvement," while four others who were considered to be schizophrenic and one arteriosclerotic failed to improve. In 1937 Schube[10] and his collaborators reported negative results in a group of 10 patients treated with Theelin. Three of their patients became worse both physically and mentally. Of 20 control patients four patients recovered. In the same year Ault, Hoctor and Werner[11] again reported favorable results in a group of 14 patients, this time stating "For all practical purposes Theelin seems to be specific in involution melancholia."

Method

At the Hudson River State Hospital this treatment was instituted in a group of patients presenting involutional melancholia in January, 1936. In order to ascertain the possibility of some psychologic element being involved in this treatment, we observed simultaneously a control group of 10 patients who were given physiologic salt solution intramuscularly at the same time as the treated

patients were receiving the hormone. Otherwise, the patients in both groups were given the same care and attention. Selecting patients for treatment or control, cases with definite arteriosclerotic changes were excluded. It was our original intention to have the benign type, with predominately affective features, and the malignant (schizophrenic) type equally represented. However, this was impossible because of the relatively low admission rate of individuals with this disorder to State hospitals. Following a complete physical and mental examination, the patients of the treated group were given, for a period of twelve weeks, 10,000 international mouse units of the female sex hormone (Folliculin Menformon) intramuscularly twice weekly and 1,000 units by mouth five times weekly. The patients of the control group were given sterile physiologic salt solution intramuscularly.

Observations

Clinical improvement

Among the 15 treated patients, two showed evidence of some improvement during the early phase of the treatment (Table 1). The mental condition in seven other patients was changeable. Days when these patients were quiet and more hopeful alternated with periods when they were restless and agitated. Six patients showed no change during the early phase. At the end of the course of treatment three patients could still be considered somewhat improved. Two other patients began to show signs of improvement toward the end of the course. Six patients whose condition was changeable in the beginning of the treatment relapsed at its termination. At a recheck three months after termination of the treatment, three patients maintained their relative degree of improvement; one among them could be considered only very slightly improved. Still another patient, who showed no improvement at the end of treatment, became slightly better three months after treatment was terminated. Finally, two previously improved patients have relapsed. It must be added that the improvement which took place was only of an institutional nature, in the sense that the patients became more tractable and more amenable to the routine of the hospital; none of them improved sufficiently to resume life in

TABLE 1. TREATED GROUP

	Age at admission	Age at treatment	Duration of psychosis in years	Personality	Weight (lbs.)	R. B. C.	Condition During treatment	At end of treatment	Three months later	Three years later	Remarks
1.	52	54	4	—*	No change	Decreased	Changeable	Unimproved	Unimproved	Unimproved	See Note 1 below
2.	53	55	5	—	No change	Decreased	Improved	Improved	Improved	Unimproved	
3.	53	55	3	+**	No change	Decreased	Unimproved	Unimproved	Unimproved	Unimproved	
4.	49	54	6	+	+4	No change	Unimproved	Improved	Unimproved	Unimproved	
5.	50	55	5	—	No change	No change	Changeable	Unimproved	Slightly improved	Unimproved	
6.	45	54	9	+	No change	No change	Improved	Improved	Improved	Unimproved	
7.	49	53	5	+	+3	Decreased	Changeable	Unimproved	Unimproved	Unimproved	See Note 2 below
8.	51	53	4	±†	—3	Decreased	Changeable	Unimproved	Unimproved	Unimproved	
9.	52	54	6	+	+7	No change	Unimproved	Unimproved	Unimproved	Unimproved	
10.	51	54	4	+	No change	No change	Changeable	Unimproved	Unimproved	Unimproved	
11.	46	51	6	+	—4	No change	Changeable	Improved	Unimproved	Unimproved	See Note 3 below
12.	46	51	6	+	No change	Decreased	Unimproved	Unimproved	Unimproved	Unimproved	
13.	56	60	4	+	+4	Increased	Unimproved	Changeable	Slightly improved	Unimproved	
14.	54	60	2	+	+3	No change	Unimproved	Unimproved	Unimproved	Unimproved	
15.	43	45	2½	—	—4	Increased	Changeable	Unimproved	Unimproved	Unimproved	

Notes:—

1—Four days of bleeding after completion of treatment.

2—Twenty-one days of bleeding after 19 days of treatment.

3—Three days of bleeding 45 days after treatment.

*Poor.

**Normal.

†Mixed.

the community. Inasmuch as these patients remained in the hospital we were able to observe them during the subsequent three years. At the end of this period the entire group, including those who showed some improvement at one time or another, have since definitely relapsed.

There was little change in the patients' physical condition at the end of the treatment. Seven showed no change in their weight, two gained four pounds, one gained seven pounds, and two gained three pounds; two patients lost four pounds, and one lost three pounds. While the red blood count and the hemoglobin percentage were normal both before and after the course of treatment, in six instances there was a drop of more than 300,000 red blood cells after the course of treatment, in two an increase of more than 300,000 blood cells while the remainder of the group showed changes within normal limits of 300,000 erythrocytes in either direction.

Although all these patients had ceased to menstruate long before the hormone therapy was instituted, three of them had transitory uterine bleedings. One patient had a flow lasting four days immediately after completion of the treatment, another patient had a hemorrhage after the nineteenth day of treatment, lasting 21 days, and a third patient had a flow of three days, a month and one-half after termination of treatment.

In the control group only one patient became somewhat better during the first half of the observation period (Table 2). However, her condition was changeable and she relapsed toward the end of the period of observation. No change was noted in the mental condition in any of the control patients three months after control observation or three years later.

As in the treated group, these patients showed a few physical changes which were of little significance. While three patients gained from three to six pounds, two patients lost three to six pounds, respectively. The remaining half of the group showed no change in their weight at the end of control observation. The erythrocyte count and the hemoglobin percentage remained normal in all instances although showing a drop of more than 300,000 in two instances and a gain of more than 300,000 in another case.

TABLE 2. CONTROLLED GROUP

	Age at admission	Age at treatment	Duration of psychosis in years	Personality	Weight (lbs.)	R. B. C.	Condition During control observation	Condition At end of control observation	Condition Three months later	Condition Three years later
1.	51	54	4	+	No change	No change	Unimproved	Unimproved	Unimproved	Unimproved
2.	45	46	1	+	No change	Decreased	Unimproved	Unimproved	Unimproved	Unimproved
3.	49	51	7	+	−3	No change	Unimproved	Unimproved	Unimproved	Unimproved
4.	58	61	4	+	−6	No change	Changeable	Unimproved	Unimproved	Unimproved
5.	59	60	1	−	No change	Decrease	Unimproved	Unimproved	Unimproved	Unimproved
6.	47	50	5	−	No change	No change	Unimproved	Unimproved	Unimproved	Unimproved
7.	53	55	2	−	No change	No change	Unimproved	Unimproved	Unimproved	Unimproved
8.	48	55	7	−	+3	Increased	Unimproved	Unimproved	Unimproved	Unimproved
9.	52	56	4	+	+3	No change	Unimproved	Unimproved	Unimproved	Unimproved
10.	50	58	8	+	+6	No change	Unimproved	Unimproved	Unimproved	Unimproved

Some Correlations

In an attempt to ascertain the factors which one might consider to be responsible for the transitory changes that took place in some of the patients we have tried to correlate such changes with certain factors. These include the age of the patients on admission and at the time when the treatment or control observation was instituted, the duration of the psychosis and the prepsychotic personality. The age in the treated group at the time of admission ranged from 43 to 56 with an average of 50. At the time of treatment the youngest patient was 45, the oldest 60 and the average age was 53.9. The duration of the psychosis at the time of treatment ranged between 2 years and 9 years, with an average of 4.1. The group of nine patients who showed various degrees of improvement during the early phase of treatment had an average age of 48.8 years on admission, the youngest being 43, the oldest 53. At the time of the institution of treatment the average age in this improved group was 52.6, the youngest being 45 and the oldest 55. The average duration of psychosis at that time was 4.9, the shortest 2.5 years, the longest 9 years. The remainder of the group of six patients who did not improve at the beginning of treatment had an average age on admission of 51.6 or 2.6 years more than the improved group, an average age at the time of treatment of 55.6 or 2.7 years more than the improved group but an average duration of psychosis of 4.5 years or 4.8 months less than in the improved group. The group of five patients with the various degrees of improvement at the end of the course of treatment had an average age of 49.8 on admission, an average age of 54.8 at the beginning of the treatment, and an average duration of psychosis of 6 years at the beginning of treatment. The group of unimproved patients at the end of treatment had an average age on admission of 51, an average age of 53.4 at the time of treatment and an average duration of psychosis of 4.15.

At the recheck three months after termination of treatment the group of the four improved patients had an average age on admission of 51, an average age at the time of treatment of 56, and an average duration of psychosis of 5.75 while the unimproved had an average age on admission of 49.63, an average age at the time of

treatment of 53 and an average duration of psychosis of 4.38. Thus we see that while in the beginning the apparently younger patients showed a tendency to improvement, at the end of the three months observation period the opposite was the case. It is also important that the duration of the psychosis was shorter in the unimproved groups. Thus it can be stated that no definite correlation can be claimed to exist between the age factors or duration of psychosis, and the effect of the treatment.

Although great significance is ascribed to the prepsychotic personality, especially in the attempt to prognosticate the final outcome of any psychosis, we found that out of our 15 treated patients, 10 had a benign prepsychotic personality makeup, one had mixed personality traits and four were considered poorly-integrated individuals. Of the nine patients showing various degrees of improvement at the beginning of treatment four had a poor prepsychotic personality, four a syntoid personality and the ninth had mixed traits.

It may be of significance that of the four patients who still showed some evidence of improvement three months after completion of treatment two belonged to the normal and the other two to the abnormal personality group. We can then say that the prepsychotic personality traits had no particular bearing on the effect of the treatment.

The average age on admission of the control patients was 52.2, the average age at the time of control observation 54.5, and the average duration of psychosis 4.3 years (Table 2). These averages are slightly higher than those in the treated group. The single patient who showed the transitory improvement was the oldest of the group.

The fact that the control patients showed no change in their mental condition under practically identical conditions, while there were some changes at certain periods during the treatment in a number of the treated group, would indicate that these changes are probably due to the effect of the hormone rather than to the psychologic influence. This is evident when we bear in mind the physiologic changes, the uterine hemorrhages for example, it has caused in some of the individuals. The reason for the improvement being

only slight and transitory may be sought in the type of patients treated and the amount of the hormone administered. Our group consisted of patients who were in the fifth and sixth decades with psychoses of from 2 to 9 years duration. It is quite possible that the chronicity of the process had an adverse effect on the treatment. Whether a more prolonged course of treatment would have been more efficacious cannot be definitely stated.

Summary

1. Fifteen women suffering from involutional melancholia were treated with large quantities of female sex hormone intramuscularly and orally for a period of three months. Nine of them showed slight improvement during the course of treatment. At the end six patients relapsed. Two others who failed to respond during the greater part of the treatment improved slightly toward the end of the therapy. Three months after termination of the treatment three patients were still maintaining their mild improvement while two other relapsed. One patient began to improve at about this time. In no case was improvement of a sufficient degree to enable any of them to resume life outside the hospital. At a recheck three years later every patient who showed some improvement at one time or other was definitely worse.

2. Three patients had transitory uterine bleedings during or after the course of treatment.

3. No definite changes in the physical condition were observed as a result of the treatment.

4. The prepsychotic personality, the individual's age and duration of the psychosis had no bearing upon the outcome of the treatment.

5. In a control group of 10 patients who were given physiologic salt solution intramuscularly only, under identical conditions, one patient had a mild and short-lived period of improvement.

Hudson River State Hospital
Poughkeepsie, N. Y.

REFERENCES

1. Strecker, E. A., and Keyes, B. L.: Ovarian therapy in involution melancholia. N. Y. S. J. of Med., 166:30, July, 1922.
2. Pratt, J. P., and Allen, E.: Clinical tests of the ovarian follicular hormone. J. A. M. A., 86:1964, June 1926.
3. Zondek, B.: Das Ovarialhormon und seine klinishche Anwendung. Klin. Wochschr., 5:1521, August, 1926.
4. King, J. H., and Patterson, E.: Observations on the menopause. J. A. M. A., 91:1423, November, 1928.
5. Campbell, A. D., and Collip, J. B.: Notes on the clinical use of certain placental extracts. Brit. Med. Jour., 2:1081, December, 1930.
6. Bowman, K. M., and Bender, L.: The treatment of involution melancholia with ovarian hormone. Am. Jour. Psychiat., 11:867, March, 1932.
7. Werner, A. A., and Collier, W. D.: The effect of Theelin injections on the castrated woman. J. A. M. A., 100:633, March, 1933.
8. Werner, A. A., Johns, G. A., Hoctor, E. F., Ault, C. C., Kohler, L. H., and Weiss, M. W.: Involutional melancholia, probable etiology and treatment. J. A. M A., 103:13, July, 1934.
9. Werner, A. A., Kohler, L. H., Ault, C. C., and Hoctor, E. F.: Involution melancholia, probable etiology and treatment. Arch. Neurol. and Psychiat., 35:1076, May, 1936.
10. Schube, P. G., McManamy, M. C., Trapp, C. E., and Houser, G. F.: Involution melancholia: Treatment with Theelin. Arch. Neurol. and Psychiat., 38:445, September, 1937.
11. Ault, C. C., Hoctor, E. F., and Werner, A. A.: Theelin therapy in the psychoses; effect in involution melancholia and as an adjuvant in other mental disorders. J. A. M. A., 109: 1786, November, 1937.

INVOLUTIONAL MELANCHOLIA

*A Study of the Syndrome and a Report on the Use of Estrogen**

BY CECIL L. WITTSON, M. D.

In the recent literature remarkable results have been accredited to the use of estrogen in involutional psychoses. Although the total number of cases described is small, the reported incidence of recovery is so high as to excite one's attention. For this reason the present study was undertaken, in which the author will review the published findings, state the results obtained from the use of estrogen in 23 cases at Central Islip State Hospital, and discuss the data obtained from a study of all female cases of involutional melancholia admitted to this hospital over a period of 12 years.

Estrogen therapy at this hospital has failed to produce the striking benefits claimed in published reports from other places. Before attempting to discuss these diverse results a general consideration of involutional melancholia would seem to be indicated, particularly since there is a considerable difference of opinion concerning the nature of the syndrome. Some prefer to include it in the manic-depressive group, others consider it a definite clinical entity, while few describe involutional melancholia as a glandular disorder. Although the involutional psychoses account for 3 per cent of the total admissions to mental hospitals, and claim 13 per cent of all women admitted between the ages of 45 and 54 years, the syndrome has been the subject of relatively few investigations. Having these facts in mind, a study was made of all female cases of involutional melancholia admitted to the Central Islip State Hospital over the 12-year period extending from July 1, 1924 to June 30, 1936.

In the Statistical Guide of the New York State Department of Mental Hygiene the following explanatory note is made concerning involutional psychosis, melancholia: "Here are to be classified the depressions occurring in middle life and later years without evidence of organic intellectual defects, characterized mainly by agitation, uneasiness and insomnia, often with self-condemnatory trends. For statistical purposes, cases showing such symptoms but with a history of previous attacks of depression or excitement

*Read before the down-state interhospital conference, held at the New York State Psychiatric Institute and Hospital, April 19, 1939.

should be classified with the manic-depressive group." All cases which did not appear to meet these requirements were excluded from the present investigation. There remained a total of 272 cases. In order that the data be as adequate and reliable as possible, all material pertaining to each patient was carefully considered before arriving at any conclusion. In the case of patients who had been transferred to other institutions, further information was obtained from these hospitals.

Etiological Factors

Race: The patients were first considered from the standpoint of race. The largest number, 25 per cent, were of Irish extraction. Twenty per cent were of mixed race. The German and Hebrew races had an equal incidence of 17 per cent. The most interesting finding was that of the many negro women admitted to this hospital only two had involutional melancholia, and the mother of one of these was Irish. The low incidence of involutional melancholia in negroes is a significant finding, and the implications require no further comment.

Environment: Central Islip draws most of its patients from an urban environment, so the statistics in this regard would not be typical. Henderson and Gillespie[1] state that in Scotland the incidence of involutional melancholia in the rural population greatly exceeds the urban rate. In New York State, Malzberg[2] found that the rural incidence of involutional melancholia is 25 per cent greater than the urban rate. Involutional melancholia is the only psychosis which occurs more often in country women than in city women.

Age: The average age on admission was 49.2 years. The average age on admission of patients who recovered was 47.1 years. The average age on admission of patients who died was 50.4 years, of those who remained in the hospital, also 50.4 years.

Marital status: These figures were not significant because there was no way of determining the rate as compared with that of the general population from which they were drawn. They were as follows: Single, 27.8 per cent; married, 47.2 per cent; widowed, 16.7 per cent; divorced, 3.5 per cent; separated, 4.9 per cent. The mari-

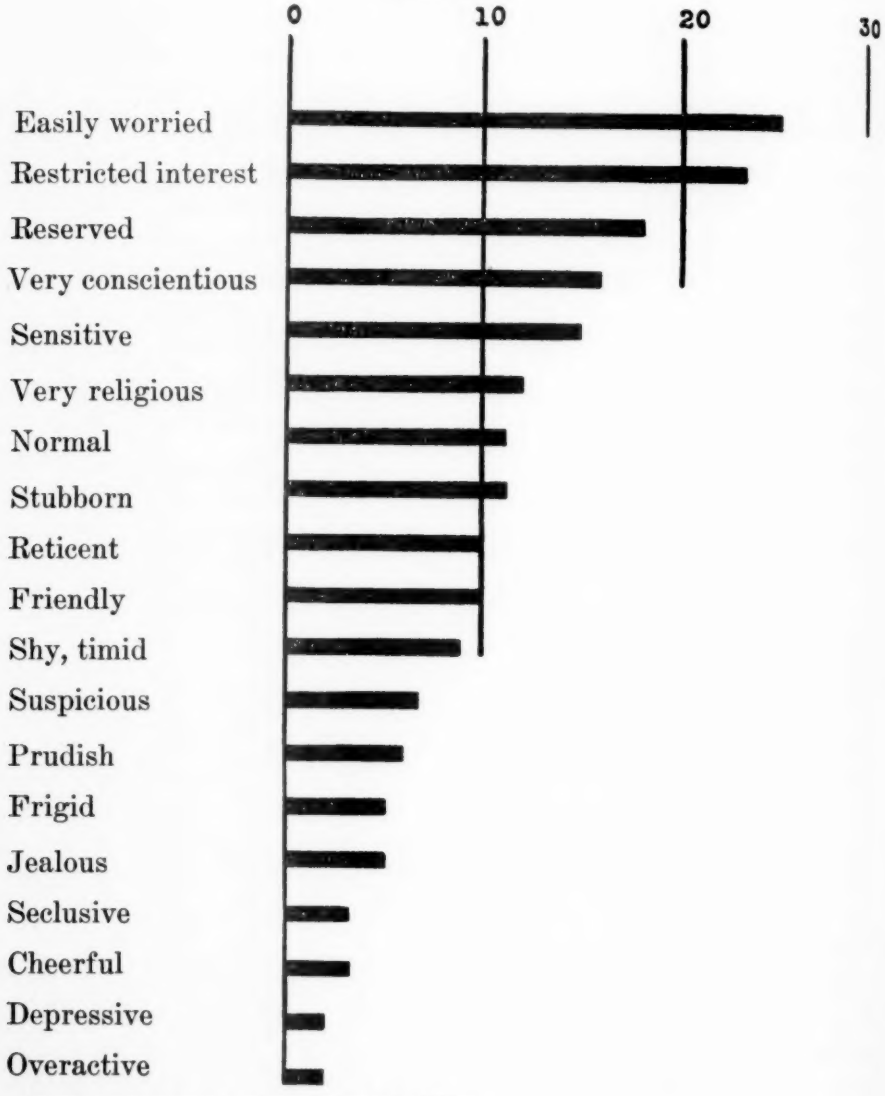
tal status of recovered patients compared with that of unrecovered patients showed no important difference.

Prepsychotic personality: In reviewing the literature of this phase of involutional melancholia it was interesting to note that few investigations have been made of the preinvolutional personality. Titley[3] made an intensive study of five male and five female patients with involutional melancholia and concluded that "persons in whom involutional melancholia develops have a characteristic pattern of personality. This pattern is distinct from that of the average or that of the manic-depressive type of person." Palmer and Sherman[4] studied carefully 50 cases of involutional melancholia from the personality aspect. They found that the pattern of these individuals revealed characteristic deviations. They were convinced that "throughout the life of the involutional patient there runs a single biological thread or process which is best characterized by the word 'rigidity.' This rigidity characterizes chiefly the unconscious adaptive mechanisms which the individual has built up to effectively control the instinctual forces. 'Control' is probably not an adequate word; something approaching the notion of strangulation would serve better."

From the 272 case histories studied here, those that contained the most complete and reliable personality descriptions were selected. There were 80 such histories and these concerned patients admitted over a 12-year period. Consequently the histories comprised the work of various physicians. A summary of these unrelated, routine personality studies should give a true objective picture of the preinvolutional personality. The accompanying chart shows the relative frequency of the descriptive adjectives used by the various physicians:

It is apparent that there is a strong predisposition toward psychosis in the personalities of the women in whom involutional melancholia develops. They are, as a rule, quiet, sensitive, occasionally stubborn and jealous persons, of the worrying type, who are overconscientious, unable to confide in anyone and usually submissive. They are not intraverts, as Palmer and Sherman have said, but as a group are quiet extraverts. Their interests are outgoing but their activities are restrained.

RELATIVE FREQUENCE OF TERMS USED TO DESCRIBE PREPSYCHOTIC PERSONALITY*



*Based on 80 unrelated routine personality studies.

Body type: The patients were classified relative to body type into the pyknic, asthenic and mixed groups; the mixed group included the athletic and dysplastic types. In the case of discharged

patients, conclusions had to be drawn from the physical description given in the history and the photograph. It was found that 43 per cent were of the asthenic type and 37 per cent of the pyknic type. The remaining 20 per cent were classified as mixed. These findings are in definite contrast to those usually given for the manic-depressive group.

Relation in time, of psychosis to menopause: The temporal relationship between the onset of menopausal symptoms and the onset of psychosis was investigated. One hundred case histories were selected on the basis of sufficient information to permit fairly accurate conclusions to be drawn. It was found that in 47 per cent of the patients the psychosis developed during the menopausal state. In 16 per cent the menopause had not occurred although the symptoms were obviously those of involutional melancholia. In 28 per cent the menopause took place five or more years before the psychosis. In 9 per cent the information was too doubtful to permit a definite conclusion. In eight of the 100 patients the climacterium preceded the psychosis by 10 years or more. In one case the onset of the psychosis was 20 years after the menopause and in another, 18 years. These findings would imply that the menopause may be, but is not necessarily, a factor in the production of involutional melancholia. They would suggest that involutional melancholia is not a glandular disorder brought about by the climacterium.

Precipitating factors: In addition to the menopause other precipitating factors were investigated. In 77 per cent of all cases well-defined psychosomatic factors, other than the menopause, were uncovered. Most frequent were acute or chronic illnesses, financial reverses, marriage of children and death of loved ones.

Folie à deux: In the group there was one instance of folie à deux. This is unique in involutional melancholia and warrants brief description. Catherine and Lillian A., spinster sisters of 49 and 50 years, lived in close relationship all their lives. In December, 1928, both developed influenza and during the month of their illness and convalescence spent their entire savings. The next month each one ceased menstruating. They found it difficult to obtain work and in February, 1929, were obliged to accept charity. The neighbors began to fear that the sisters would attempt suicide,

and arranged for their hospitalization. On April 20, 1929, both were admitted to Central Islip State Hospital. They had almost identical symptoms, consisting chiefly of agitation, depression and self-condemnatory trend. When first interviewed Catherine stated "As soon as I was grieving she (Lillian) took it from me." In August, 1929, both developed pulmonary tuberculosis, from which they subsequently died.

These two cases stress dramatically the psychogenic factors involved in the production of involutional melancholia.

Thought content: Ninety-six of the 272 cases displayed the classical symptomatology of involutional melancholia, which includes: agitation, depression, self-accusatory and self-depreciatory trends hypochondriacal ideas, nihilistic delusions and feelings of unreality. Intellectual impairment and retardation were not encountered.

Prognosis

In the literature there is considerable difference of opinion as to the prognosis of involutional melancholia. Kraepelin, before he discarded involutional melancholia as a separate entity, stated that 51 per cent of his patients got well, 32 per cent became chronic and 19 per cent died. Hoch and MacCurdy[5] studied the prognosis in involutional melancholia and concluded that there were two divisions, the chronic group and the recoverable group. They felt that the chronic group had schizophrenic and the recoverable group manic-depressive symptoms. This is a point for further investigation. They felt that "patients with involutional melancholia recover unless they show as dominant symptoms: marked insufficiency of affect, peevish or autoerotic behavior or ridiculous hypochondriacal delusions which are usually concerned with the alimentary tract." The current textbooks variously estimate the number who die or become chronic as being from 40 to 60 per cent. In this series of 272 patients admitted during a 12-year period ending June 30, 1936, 146, or 54 per cent, were discharged; 78, or 28 per cent, died and 48, or 18 per cent, failed to recover and remained in the hospital. The case records show that 39 per cent of all patients admitted were discharged as either much improved or recovered. In most instances the records included the year following release from the hospital. It was interesting to note that in the year 1934 the discharge rate

exceeded the average discharge rate by 49 per cent. In that year 80 per cent of all first admissions were subsequently discharged. These findings would indicate that clinical conclusions based on a small number of consecutively admitted patients are apt to be fallacious. We note that the duration before admission, in most instances, exceeds the period of hospitalization. This would suggest the advisability of early commitment.

Duration of hospitalization: Seventy-four per cent of the recovered patients remained in the hospital less than one year, sixty-seven per cent six months or less. The shortest period of hospitalization was two months and the longest period of hospitalization for a recovered patient was five years, eight months. Sixty-two per cent of the much improved patients left the hospital within one year but only 34 per cent in six months or less. Sixty-four per cent of the patients who were discharged as much improved left the hospital within 12 months; 28 per cent in six months or less. The figures for the improved patients are misleading as some were discharged in less than six months for deportation and other non-medical reasons. The shortest period of hospitalization for improved and much improved patients was six years, two months. The longest for much improved was eight years and ten months. These figures would suggest that most patients have a period of hospitalization less than one year and that without specific therapy a large number are able to leave the hospital within six months. It is also suggested that recovery is possible after many years.

	Period of hospitalization			
	6 months or less Per cent	7 months to 1 year Per cent	1 year to 2 years Per cent	Over 2 years Per cent
Recovered	67	7	12	14
Much improved	34	28	21	17
Improved	28	36	8	23

Estrogen Therapy

The use of glandular products in the treatment of this syndrome is not new. For years substances such as whole ovary, and corpus luteum were used empirically. The potency of these products was uncertain and the clinical effects minimal. There was no marked enthusiasm until 1930, when estrogen, a potent sex hormone, was

made available. Since then considerable interest has been displayed and clinical claims have been made for this form of treatment. Estrogenic substance (or estrogen) is the generic term for estrus-producing hormones which are marketed under various names such as Theelin, Amniotin, Progyon-B and Estriol. The effects of estrogen have been the subject of intensive study, but as yet little is known of the action and interaction of the various endocrine glands having to do with the sex cycle. Experimentally, in animals the estrogenic substances cause stimulation of the epithelium of the female genital tract; uterine bleeding and hypertrophy of the mammary epithelium may also be induced. It has been demonstrated that the anterior pituitary gland produces gonadotrophic substances which increase during certain physiological periods, including the menopause. There is considerable evidence that the hyperactivity of the pituitary gland can be suppressed by the administration of estrogen. Many other claims are made but as yet are clinically unproven. In nonpsychotic women, estrogen has been used with excellent results in the treatment of the vasomotor and related disturbances occurring during the menopause.

Bender and Bowman[6] were among the first to use these products in involutional melancholia, and in 1932 reported on the treatment of seven patients. They administered Squibb's Amniotin in aqueous solution either by injection or in the form of vaginal suppositories. The daily doses given ranged from 20 to 40 rat units and the total amount given to each patient was comparatively small. Two of the seven patients made social recoveries, three were unimproved and two died.

In 1934 Werner[7] of St. Louis, and his associates at Missouri State Hospital No. 4 and the St. Louis Sanitarium, in a preliminary report, stated that they had 41 cases of involutional melancholia under treatment. Twenty-one patients were being given, by injection, 50 rat units of Theelin daily and 20 patients were being used as controls. They enthusiastically reported some improvement in all but two of the Theelin-treated patients. In a second communication appearing in 1936, Werner,[8] et. al., reported that 39 patients had received Theelin. They stated that the control cases had shown no improvement with salt injections but that after receiving Theelin the majority improved. Accordingly, on the basis of these

results they arrived at the following conclusion: "Theelin is curative in cases of uncomplicated involutional melancholia and in other types of mental diseases occurring at the menopause." In a subsequent communication, Ault, Hoctor, and Werner[9] reported on another series of 14 patients. With this group they employed the newer and more potent Theelin-in-oil in doses of 30,000 to 40,000 international units during the first month of treatment, after which the dosage was reduced. The average duration of treatment was slightly over three months. Some improvement was noted in all 14 patients and 11 were said to be socially adjusted at home. On the basis of the results of the second series Ault, Hoctor and Werner[9] concluded: "For all practical purposes Theelin seems to be specific in involutional melancholia, the recovery rate being 92 per cent in our series of cases." Their conclusions are not above criticism and they will be discussed in another part of this paper.

In England, Jones, et al.,[10] treated 17 patients with Oestradiol Benzoate. Six, or 43 per cent, recovered with an average stay of three months in the hospital. He claimed that those patients who failed to recover were "less satisfactory propositions than those who were successfully treated." He made gonadotropic examinations before and after treatment. There was no definite correlation between the laboratory findings and the clinical results. Little, et al.,[11] in Canada, administered 100 international units of estrogen twice weekly to 11 patients suffering from anxiety occurring in connection with the menopause and to six with anxiety occurring apart from the menopause. Of the first group, 10, or 90 per cent improved. Four of the second group became worse, one improved and one was unimproved. Suckle[12] reported recovery in one patient treated with large doses of Progynon-B for three months. Hawkinson[13] administered large doses ranging to 10,000 units daily to 14 patients with involutional melancholia and reported that 12, or 85.7 per cent, completely recovered within a period of 10 weeks. Davidson[14] of the Manhattan State Hospital gave small doses of Theelin along with the usual routine forms of treatment to 20 women suffering from involutional melancholia and reports that 70 per cent recovered and 20 per cent improved within four months.

Results of a different kind have been obtained by Schube[15] who administered approximately 1,500 units of Theelin intramuscularly

three times a week to 10 patients. None of his patients recovered or improved and 3 became worse.

At the Central Islip State Hospital various preparations of estrogen have been used in 20 unselected female patients with involutional melancholia. These patients represent a typical cross-section of hospitalized involutionals. They were not treated as a "special series," for in addition to estrogen they received all the routine forms of therapy. Some were treated while on the admission service and others after transfer to a continued treatment ward. The usual dose was 2,000 international units of estrogen-in-oil, intramuscularly, every other day. In some instances twice that amount was given and several received concentrated tablets and capsules of estrogen in addition to the injections. The total amount per patient varied from 72,000 to 500,000 international units. The duration of treatment was from 3 to 13 months.

Illustrative Cases

O. L. was a single, white woman, 43 years of age, with a poor family history. When she was 20 years old her fiancé died suddenly. After this the patient devoted all her energy to business and church until she lost her job through no fault of her own. She later became deaf and financially dependent upon a stepsister. However, she remained well integrated until two years before admission when she became mildly depressed. About this time symptoms of the climacterium developed. She became more depressed and expressed delusions of a nihilistic character. When admitted she was agitated, depressed and self-condemnatory. After receiving 14,000 international units of Amniotin-in-oil she showed a definite improvement. After 25,000 units all symptoms which had existed for two and one-half years disappeared. Several weeks later the patient was paroled from the hospital but within 24 hours after her parole she made a suicidal attempt and was returned in an agitated, depressed state. Further injections were so strongly resisted by the patient that treatment could not be continued. Therefore, she has received no additional estrogen but again gradually improved and has been out of the hospital for eight months apparently free of all symptoms.

N. R. was a widow, 43 years old, always somewhat withdrawn and serious minded. A hysterectomy was performed in 1934 and her menopause ensued. One year later her husband died. Several weeks before admission she complained of pain in one breast and although reassured it was not can-

cerous continued to be distressed about it; paced the floor and made self-reproachful remarks. On admission she talked at great length about sex matters. Later she became depressed and agitated. Physical examination was negative except for a minor cardiac condition. The patient received 144,000 international units of Amniotin capsules, 2,000 international units daily, for two months and during the past six months she has received a total of 72,000 international units of Amniotin-in-oil. There is now a slight quantitative improvement but she is still mildly agitated and depressed.

M. S., a married woman, 47 years old, was apparently well adjusted and healthy until one year before admission. At that time menstruation became irregular and a few months later the patient developed vasomotor instability for which she was given three injections of Theelin. Several months later the husband encountered financial difficulties and her closest friend died of cancer. Patient became restless, depressed and agitated. She attempted suicide. On admission she was apprehensive, depressed and agitated. Three months later when transferred to a continued treatment ward she was worse and made several suicidal gestures. In May of 1936, organotherapy was instituted. She was given 2,000 international units of Amniotin-in-oil every other day. After receiving 25,000 units she began to show definite improvement. After 50,000 units all evidence of agitation and depression disappeared. In May, 1936, menstruation returned; she seemed pleased and encouraged. A total of 72,000 international units of Amniotin-in-oil was given. She was placed on Progynon-B, 5,000 international units, by mouth five days per week. On July 16, 1936, she was paroled as much improved. She made a satisfactory adjustment until she received word of the accidental death of one of our employees. She then became agitated and depressed and was returned to the hospital. Again Progynon-B therapy was instituted with improvement. Six weeks later she was paroled and although still somewhat unstable has been able to remain at home for almost three years.

M. W. was a white, married woman, 40 years old, whose marital life was reported to be congenial. She was described as a home-loving type of woman, timid, sensitive and stubborn. Five years before admission she experienced a surgical menopause. For eight months she had suffered from dizziness and vasomotor instability but there was no change in personality until five months prior to admission. She then began to complain of pyorrhea and said that "it was too late for treatment." Following a tonsillectomy she became depressed, restless and self-accusatory. When admitted the patient was very agitated, restless, suspicious and inhibited; she expressed some delusions with paranoid coloring. At the hospital she had periods during which she was quiet, unresponsive and depressed. At other

times she was agitated and wailed about people being killed. She received Amniotin, 2,000 international units, every other day and improved within two months. Four months after admission, upon the insistence of her husband, the patient was discharged as much improved.

M. B. was a 53-year-old widow, who had four living children. She was described as an overreligious and scrupulously honest woman. For 16 years she nursed a chronically ill husband, who had died three years prior to the patient's admission to this hospital. One year later when M. B. was exposed to radium for a gynecological condition, an artificial menopause occurred. She was given estrogen by mouth and was relieved of her dizziness and vasomotor disturbances. Eighteen months before her admission she began to express paranoid ideas about her family and was admitted to a private sanatorium in an agitated state. There she thought people were giving her dope and plotting against her. She was agitated, tense, suspicious and defensive. She was placed on Theelin, 2,000 international units per day, and received 142,000 units without improvement.

R. K. was a 58-year-old married woman, a native of Poland, whose menopause had occurred seven years before admission. Six months prior to hospitalization she became hypochondriacal, ate poorly, talked of the past and gradually became increasingly depressed and agitated. On admission she was depressed, apprehensive and suspicious. She moaned and groaned "Take me to the waiting room. I'm a nice woman." She received Amniotin-in-oil, 2,000 international units, every other day for three months. There was no change in the mental picture.

E. J., a 45-year-old graduate nurse, the mother of two children, was described as a happy, quiet individual with rather restricted interests. One year prior to admission her menstruation became irregular. Patient began to make somatic complaints such as "My body is all dried up . . . can't swallow." She refused to eat and was admitted in an agitated, depressed state. She expressed many bizarre somatic complaints. Physical examination demonstrated nothing of importance. Following admission she wailed incessantly "Oh doctor, they are going to bury me alive! I have to live this way for years!" After receiving Amniotin, 2,000 international units, every other day for three months, she became worse and at the time of her transfer to another hospital was still unimproved.

E. D. was a married woman, 43 years of age, said to have been sexually frigid and unable to confide in others. About one year before admission menstruation became irregular. She received an unexpected proposal from a friend, who expressed the wish that she divorce her husband. She became restless, fearful, agitated, suicidal, depressed and bewildered. She spontan-

eously showed some improvement of short duration, then became worse and complained of "hot flashes" and dizziness. After receiving 72,000 international units of Amniotin she showed marked mental improvement, was paroled and one year later discharged as recovered.

B. S. was a 39-year-old married woman. Her father had suffered a senile psychosis and one brother had been psychotic. She was described as being of the sensitive, worrying type with restricted interests. No history of previous attacks. Several months prior to admission she began to express the fear that she would lose her job because she believed that her brain did not work. Menstruation had become irregular, then had ceased. She grew worse, would not eat because she said her "bowels would not work." When admitted here she was depressed, agitated, expressed feelings of inadequacy, some somatic complaints and thought she should be punished for not regularly attending church. Physical examination was negative except for hypertension; blood pressure registered 160/100. She was given Amniotin-in-oil, 2,000 international units, every other day. Menstruation resumed following the fifteenth injection. After she had received 72,000 international units she seemed slightly improved. Then because of an eroded cervix a dilatation and curettage was done. Following this operative procedure the patient showed very marked improvement and was subsequently discharged as recovered.

It is difficult to evaluate the effects of substitutional therapy in this case. Before the operation this patient had shown some slight improvement, but the postoperative improvement was of dramatic intensity.

S. L., a 51-year-old married woman, who with the onset of her menopause became fearful, apprehensive, thought her family was going to be killed because of things she had done, paced the floor and wrung her hands. When admitted to this institution she was agitated, emotional and depressed. She was given 29 daily injections of 2,000 international units each of Theelin. There was slight improvement followed by a relapse. Accordingly, treatment was discontinued. Seven months later the patient began to improve and 14 months after treatment had been discontinued she was discharged as improved. Fifteen days later, however, she returned to the hospital. She was given 72,000 international units of Amniotin over a period of two months. There was no improvement during treatment, but shortly after its termination a decided improvement was noted. She was placed on parole and succeeded in maintaining a remission for seven months. Upon her return to the hospital she was given Theelin by mouth. She was again paroled but was considered unimproved and this time remained out only one month. Since then she has received Theelin, 4,000 international units daily.

In all, she has received almost one-half million international units of estrogen and is now unimproved.

Discussion

In our group of 23 female cases of involutional melancholia, the following were the results: 2 (8.7 per cent) recovered; 5 (21.7 per cent) improved and were paroled; 2 (8.7 per cent) showed some improvement but not enough to warrant parole; 14 (60.9 per cent) did not improve. Two of the improved cases were returned to the hospital.

The statistical findings of this study suggest that involutional melancholia is a sufficiently distinct psychiatric syndrome to warrant separate classification and differentiation from other mental disorders. It is true that some of its characteristic symptoms can be found in depressed manic-depressive patients, and others in schizophrenics. However, it must be remembered that individual psychiatric symptoms are not pathognomonic; paretics may be depressed, manic-depressives, hallucinated or schizophrenics elated. A psychiatric diagnosis depends not upon individual symptoms but on the picture as a whole. It is felt that the diagnosis of involutional melancholia is useful and valid. Involutional melancholia differs from manic-depressive psychosis in many important aspects. The prepsychotic status of the individual who develops involutional melancholia is unlike that of the future manic-depressive in constitution, temperamental makeup and style of life. The very lack of previous mental upsets is a significant indication of dissimilarity. The difference in onset, duration, prognosis and thought content offer additional points for clinical differentiation.

The reports of Werner[7] and his associates claiming Theelin to be a specific for involutional melancholia have received wide attention. It is unfortunate that these reports do not contain case material, as a careful study of them leaves considerable doubt as to the correctness of the diagnosis and basis for recovery rate. Werner states that "the so-called involutional melancholia is only an extreme manifestation of menopause" and that the diagnosis of involutional melancholia is made when the following symptoms are seen in exaggeration: "depression, crying and decreased memory and ability for concentration accompanied with mild degree of psychosis." He does not explain what constitutes a mild degree of psy-

chosis. Since a history of previous mental illness does not prevent him from making the diagnosis of involutional melancholia, we wonder how many of his recovered cases were manic-depressives. The apparent recovery rate of 92 per cent was obtained by eliminating from the series patients who failed to respond to Theelin. The reasons for discarding the failures are inadequate. In some instances the existence of mental disease in the family is given as the basis for eliminating the patient from the series.

It is felt that our results with estrogen are more in accord with the probable etiology of involutional melancholia than are the favorable results reported by others. In order that estrogen be a "specific," involutional melancholia would have to be primarily a glandular disease definitely related to the climacterium. The evidence presented in this study clearly indicates, however, that involutional melancholia results not from one factor but from a constellation of factors, some of which are organic but many of which are purely psychic. It has been shown that the psychosis does not necessarily bear even a temporal relationship to the menopause. This relationship was present in only 47 per cent of the cases in this study. The question arises: Do those women who develop involutional melancholia concurrent with the menopause have a more intense glandular disturbance than those who remain normal during the menopause? Carlson[16] investigated this relationship and found that the hormonal status of women with involutional melancholia does not differ from that of normal women at the climacterium. It should be remembered that menopause and involution are not synonymous terms. Menopause merely means the cessation of menstruation and signifies the end of the reproductive stage. Involution is the gradual transitional period extending approximately from menopause to senility. It has both its physiological and psychological aspects.

MacCurdy[17] in discussing the nature of involutional melancholia, minimized the importance of the physiological changes. He was of the opinion that physical change occurring during involution cannot be the only factor. He said "if it were we would expect to find a simple dementia of the senile or arteriosclerotic type. It does not explain the peculiar changes of interest, ideas or conduct characteristic of the psychosis." The indications are that the psychological

readjustments made necessary by involution are more important than the physiological changes. However, it is difficult to separate the two. At the time of involution the average individual begins to realize that the prime of life is passed. There are few persons who can face either old age or death with grace. The frustrated woman begins to realize that she has not really lived and that it is too late. The woman who has led a full and satisfying life is able to make satisfactory readjustments, but those individuals who have strangulated their natural desires, who have led an unsatisfying, restricted, submissive existence necessarily find it difficult to accept this phase of decline. It is only natural that barriers should weaken and submerged complexes seek expression. Often the transition is made more difficult by the loss of financial security, marriage of children or death of loved ones. If the woman should be of the worrying type, any of these occurrences, added to the loss of physical vigor and the realization of oncoming senesence, may easily lead to an agitated depression.

In view of the tendency to use large amounts of estrogen, attention should be called to the possible dangers involved therein. One of my cases and one of the Bowman and Bender[5] series died of carcinoma after receiving estrogen. This may have been coincidental and unrelated to estrogen therapy. However, it has been experimentally demonstrated that estrogen *can* produce carcinoma. Bonser[18] gave large doses of estrogen to female mice of a strain resistive to carcinoma and produced mammary tumors in a large number. Carcinoma seldom develops in male mice but Gardner[19] induced it in them with estrogen.

Summary

1. Two hundred and seventy-two cases of involutional psychosis, melancholia, were studied.

2. The classical symptoms were displayed in 96 per cent of the cases.

3. Involutional melancholia appears to be a definite clinical entity which warrants separate classification.

4. The incidence of involutional melancholia varies with race. The Irish are most susceptible and the negroes have a very low incidence.

5. Environment affects the incidence: involutional melancholia is more frequent in women living in rural surroundings.

6. The average age of all cases was 49.2 years; the prognosis was found to vary with the age.

7. Marital status did not affect prognosis in this series.

8. Individuals who develop involutional melancholia have a definite personality makeup.

9. Forty-three per cent were of the asthenic body type and 36 per cent of the pyknic type.

10. In only 47 per cent of the cases was there a temporal relationship between menopause and the psychosis.

11. In 77 per cent precipitating factors other than the climacterium were present.

12. A case of folie à deux was described.

13. Most patients are hospitalized for less than one year; many for less than six months.

14. Fifty-four per cent of all cases were discharged; 28 per cent died; 18 per cent did not improve.

15. Patients may recover after a period of many years.

16. Estrogen failed to produce the beneficial results claimed by others.

Central Islip State Hospital
Central Islip, N. Y.

REFERENCES

1. Henderson, D. K., and Gillespie, R. D.: A Textbook of Psychiatry. Oxford University Press, 1932.
2. Malzberg, Benjamin: The prevalence of mental disease among the urban and rural populations of New York State. PSYCHIAT. QUART., 9:1, 55-87, January, 1935.
3. Titley, W. B.: Prepsychotic personalities of patients with involutional melancholia. Arch. Neurol. and Psychiat., 36:19:33, July, 1936.
4. Palmer, Harold D., and Sherman, Stephen, H.: The involutional melancholia process. Arch. Neurol. and Psychiat., 40:762-788, October, 1938.
5. Hoch, A., and MacCurdy, John T.: Prognosis of involutional melancholia. Arch. Neurol. and Psychiat., 7:1, January, 1922.
6. Bowman, Karl, and Bender, Lauretta: Treatment of involutional melancholia with ovarian hormone. Am. J. of Psychiat., 11:865-891, 1932.
7. Werner, August A., et. al.: Involutional melancholia. J. A. M. A., 103:13, July 7, 1934.
8. ——: Involutional melancholia. Arch. Neurol. and Psychiat., 35:1076, 1936.
9. Ault, C. C., Hoctor, Emmett F. and Werner, August A.: Theelin therapy in the psychoses. J. A. M. A., 109:22, November 27, 1937.

10. Jones, M. S., MacGregor, T. N., Todd, H.: Oestradial benzoate therapy in the depression at the menopause. Lancet, 1:320-322, February, 1937.

11. Little, G. A., and Camerson, D. C.: Canad. M. A. J., 37:144-150, August, 1937.

12. Suckle, Edward J.: Treatment of involutional melancholia by estrogen. J. A. M. A., 109, 3: 203, July 17, 1937.

13. Hawkinson, E. F.: The menopause syndrome; treatment with estrogen. J. A. M. A., 11:390, July 30, 1937.

14. Davidson, G. M.: The involutional (mental) syndrome. PSYCHIAT. QUART., 13:42-81, January, 1939.

15. Schube, Purcell, G., et al.: Involutional melancholia. Arch. Neurol. and Psychiat., 38:505-515, September, 1938.

16. Carlson, C. C.: Female sex hormone (in urine) in involutional melancholia. Northwest. Med., 36:55-59, February, 1937.

17. MacCurdy, John T.: The Psychology of Emotion. Harcourt, Brace and Co., New York, 1935.

18. Boner, G. M., et al.: The carcinogenic action of oestrone: induction of mammary carcinoma in female mice of a strain refractory to the spontaneous development of mammary tumors. J. Pathol., 110: 619, February, 1938.

19. Gardner, W. U., et al.: Cancer of mammary glands induced in mice receiving estrogenic hormone. Arch. Pathol., 21:265-272, March, 1936.

FIVE YEARS WORK WITH CEREBRAL PALSY

A Critical Analysis

BY JACOB SIRKIN, M. D.

Introduction

The care and treatment of cases of cerebral palsy always has been, and still is, a problem fraught with difficulty. Due to the tremendous task of caring for them, many of these unfortunates have been placed in institutions. That in the past little has been accomplished toward their rehabilitation, is primarily because so little is known about them.

More than five years ago, the late Dr. Charles L. Vaux, then superintendent of the Newark State School, was greatly concerned over the fact that so little was being done for these patients. He contacted Dr. R. D. Severance, district State orthopedic surgeon, and through their combined efforts, a department of physical therapy for treating cases of cerebral palsy was instituted at the Newark State School. This paper will deal with the results of the work of that department since its inauguration five years ago. But before going into these specific results, it seems worthwhile to touch briefly and in a general fashion on the subject of birth injuries.

Etiology

It has been found that birth injuries occur much more frequently than it would seem to the casual observer. In one series of 500 births, spinal fluid examinations revealed the presence of blood in 10 per cent of the cases,[1] while in another series, cisternal punctures revealed blood in 16.9 per cent of the cases.[2] The predisposing causes of birth injuries are prematurity, a rapid or precipitate birth, a protracted labor, excessive molding of the child's head, disproportion of the foetal head to the mother's pelvis, a malformed pelvis, improper use of forceps and unskilled obstetrics. In many cases, however, the exact cause is undetermined.

Nature of the injury

The injury itself usually consists of the tearing of blood vessels, or of the cerebral sinuses, of the brain or spinal cord themselves, or

of structures supporting these organs, especially the tentorium. In this paper, it is not deemed necessary to consider at length the individual parts of the nervous system. Depending on the areas involved, we may get a variety of syndromes. If the injury is slight, or if a "silent area" is involved, no symptoms may result, but in other cases sequelae or residuals follow. The most important of these are spastic paralyses, consisting of fixed spasticity, athetosis and flaccid paralysis, tremors, ataxia, mental deficiency, convulsive states, behavior problems, et al., or a combination of any of these symptoms. It may be mentioned here that we accept only patients who show evidence of mental deficiency, that is, patients with an I. Q. of approximately 70 or under, so it is not unreasonable to assume that ours are cases in which rather severe injury has occurred.

Treatment Program

In the department of physical therapy at the Newark State School, we are chiefly interested in the physical rehabilitation of those patients showing evidence of spasticity and/or athetosis. The chief objectives of treatment are as follows:

1. Easier care in institution, eventually less expensive care. If these patients learn to feed and dress themselves, fewer employees will be necessary.

2. Training for more adequate physical ability. They may get about by themselves and take care of most of their own needs.

3. Training for ultimate physical capacity. They care for all their own needs, and possibly return home.

A description of our setup is as follows: For the first few months after therapy was instituted, the patient was visited daily for treatment by the therapist, and allowed to pursue the usual ward routine the rest of the day. This, however, did not work out well, due to inconvenience, commotion, lack of proper facilities, et cetera, so that the patients were later segregated within a separate department. Here, they are under continuous supervision.

The children are together during the day, away from the other patients in the institution. They receive their academic work, occupational therapy and music, apart from the work carried on in the rest of the school. They have their own kitchen, dining room,

dormitory and classrooms. Once or twice each day, according to individual need, each patient receives from one-half to one hour of massage, muscle training, or relaxation treatment, as the case may warrant. The rest of the day they are occupied with academic work, occupational therapy, music, speech correction, supervised and free play. They also have several rest periods daily.

Treatments are carried out as recommended by the consulting orthopedic surgeon. There are a resident medical supervisor of the department (the writer), and three physical therapists who administer the actual corrective treatments, under the supervision of a chief therapist. For a time a speech correctionist was employed, but at present speech correction is given by the therapists. Necessary operative procedures are carried out by Dr. R. D. Severance.

Record of work

Since the physical therapy department was instituted, 48 patients have received treatment. Of these, 46 were cases of cerebral palsy due to birth injuries (or possibly disease in some instances), one was a case of pseudohypertrophic muscular dystrophy and one was a hydrocephalic patient with spastic lower extremities. Of the 49 patients treated, satisfactory improvement was obtained in 18, while 30 showed little or no improvement.

A division of the 30 unimproved cases is as follows:

Treated for periods ranging from 1 to 17 months, but treatment had to be discontinued due to lack of cooperation and lack of improvement—10 patients.

Treated for periods varying from 6 months to 5 years but did not react to treatment, due to the severity of the lesion. One of these had operative work consisting of alcoholization—8 patients.

Treated for 5 months but developed childhood tuberculosis and treatment had to be discontinued—1 patient.

Treated for one and one-half years but was discontinued due to patient's lack of cooperation and of improvement, and to interference by patient's mother who did not wish further treatment or necessary operative procedures—1 patient.

Treatment discontinued after five months because of no improvement. This, however, was the case of pseudohypertrophic muscular dystrophy—1 patient.

Patients with marked athetosis, treated for one year, two months and three years, two months, respectively, were discontinued due to lack of improvement although there may be a possibility of later treatment—2 patients.

Treated from three months to three years, eight months to date and are still under treatment, but show inadequate improvement. Of these, however, three are to have operative work at a later date—7 patients.

Of the remaining 18 patients, treatment has been completed with satisfactory results in 6 instances and is being continued in 12 cases. A brief summary of these 18 cases follows:

Illustrative Cases

Treatment completed

Case 1: T. L., male, age 13, I.Q. 30, subsequently 32. Spastic lower extremities and left arm. Treated for three years, five months. Previously walked with assistance and was unable to grasp with the left arm. At conclusion of treatment, walked alone, able to grasp with left arm in pronation. Prior to treatment, fed self with assistance, could not dress self; at conclusion of treatment, fed self alone and dressed with assistance. At present, one and one-half years later he needs much coaxing to maintain improvement.

Case 2. C. F., female, age 22. I. Q. 35. Spastic lower extremities and hydrocephalic. Treated for three and one-half months. Previously walked with crutches. At conclusion of treatment, walked alone. At present, four and one-half years later, does not walk alone, nor with crutches. Has deteriorated and shuffles along the floor. The lesion here, however, is progressive, and continuance of improvement is not to be expected.

Case 3. E. S., female, age 14. I. Q.. 64. Spastic right lower extremity. Treated for five months. Walked with right knee stiff prior to treatment. At conclusion of treatment, definite improvement in knee-bending while walking. At present, four years later, maintains improvement.

Case 4. L. M., male, age 10. I.Q. 52. Spastic left upper and right lower extremity. Treated two years, four months. Prior to treatment, right foot contracted in varus position. Tenotomy of exterior hamstring, posterior

tibial and peroneals. At present, walks with stable foot in right angle position.

Case 5. C. D., male, age 8. I.Q. 42. Spastic right lower extremity. Treated six and one-half months. Prior to treatment walked with right foot in equinovarus position. Fiske cast applied after stretching tendo-achilles and plantar structures. At conclusion of treatment, walked satisfactorily. At present, two years later, still walks well.

Case 6. J. D., male, age 3 years 11 months. I.Q. 29, subsequent I.Q.'s 45, 64, 67, 57 and 67. Marked athetosis and mild spasticity throughout. Treated for three years. Unable to walk or sit alone, unable to feed or dress self prior to treatment. Coordination very poor. Unable to talk. At conclusion of treatment, walked alone with good balance, fed and dressed self. Spoke understandably and coordination was greatly improved. At present, two years later, improvement maintained.

Treatment incomplete

Case 7. B. N., male, age 6. I.Q. 40, subsequent I.Q.'s 40, 33, 30. Spastic lower extremities. Treated for three years to date. Prior to treatment, walked with assistance, marked scissors gait, feet in equinus. Could not feed or dress self. Was operated: alcoholization of hamstrings and calf groups, bilateral; tenotomy of hamstrings, bilateral; tenoplasty right tendo-achilles. At present, walks in stationary walker alone without scissors gait. Feet flat on floor. Feeds self alone, dresses self with assistance.

Case 8. M. A., female, age 5. I.Q. 61, subsequent I.Q.'s 66, 72. Spastic right lower extremity. Treated for one year to date. Prior to treatment, walked with right hip and knee flexed, right foot in equinus. At present, when supervised, hip and knee in normal position, walks with heel to floor.

Case 9. C. R., male, age 11. I.Q. 40, subsequent I.Q.'s 39, 37. Spastic lower extremities and left upper extremity. Treated for one year to date. Prior to treatment walked with crutches, now beginning to walk alone.

Case 10. G. H., female, age 7. I.Q. 70, subsequent I.Q.'s 63, 55, 63. Spastic right upper and lower extremities. Treated for two years, five months to date. Prior to treatment: partial supination of right hand, unable to use right hand, walked with limp of right leg. At present, walks without change, but supination is almost complete and can grasp large objects.

Case 11. F. L., male, age 8. I.Q. 52, subsequent I.Q.'s 50, 53, 52 (I.Q. 75 with Pintner Test for deaf children). Combined spastic quadriplegia and athetosis. Treated for two years to date. Prior to treatment, walked alone with marked athetosis, fell frequently. At present, athetosis less

marked, walks much better, falling less. Dressed with assistance previously, now dresses self alone.

Case 12. D. S., female, age 8. I.Q. 71, subseqent I.Q.'s 68, 62. Spastic left lower extremity. Treated for one year, five months to date. Prior to treatment, equinovarus left foot. At present, walks with foot flat, slight limp.

Case 13. J. Z., male age 5. I.Q. 60, subsequent I.Q. 64. Spastic lower extremities. Treated for five months to date. Prior to treatment, able to stand with assistance, unable to walk. At present, walks alone in stationary walker.

Case 14. B. C., female., age 6. I.Q. 55, subsequent I.Q.'s 52, 43. Loss of muscle tone to general body musculature. Treated for two years to date. Earlier, unable to sit up alone and walked with assistance. Now sits up alone, walks alone in stationary walker. Previously dressed self with assistance and fed self with assistance, now dresses and eats alone.

Case 15. A. E., female, age 13. I.Q. 40, subsequent I.Q.'s 37, 38. Combined spasticity and athetosis right upper and lower extremities. Treated for one year, five months to date. Prior to treatment, walked with assistance, now walks alone. To have operative work later.

Case 16. W. D., male, age 6. I.Q. undetermined, subsequent I.Q.'s 52, 42, 33. Combined spastic quadriplegia and athetosis. Treated for three years to date. Prior to treatment, walked with assistance. Equinovarus both feet. Supination very slight bilaterally. At present, grasping unimproved, walks alone, feet flat on the floor. Some difficulty in equilibrium. Previously fed self with assistance, unable to dress. At present eats without, and dresses with, assistance.

Case 17. M. N., female, age 5. I.Q. undetermined, subsequent I.Q.'s 65, 55, 52. Mild spasticity, all extremities. Treated for three years to date. Walked with assistance, no supination of right hand. At present grasps in supination, and walks alone in stationary walker. Previously ate with assistance, did not dress self. Now feeds herself, dresses with assistance.

Case 18. P. S., female, age 5. I.Q. approximately 60, subsequent I.Q. 61. Combined spastic quadriplegia with athetosis. Treated for seven months to date. Prior to treatment unable to sit alone. At present, sits alone with general relaxation improved. However, she needs full care.

Discussion

Thus we see that of 48 cases treated, 18, or 37½ per cent, have been improved. Improvements are as follows:

Six patients are walking alone (one has regressed since treatment was discontinued).

Four patients walk alone in stationary walker.

Six patients eat without assistance.

Four patients dress without assistance.

Three patients dress with assistance.

The remainder seem to be well on the way to further rehabilitation.

The original I. Q. in our improved patients ranged from 29 to 71. Subsequent tests ranged from 30 to 72. In 6 cases the I. Q. fell. In 4 cases only one I. Q. is determined. The obvious reason for the drop in I. Q.'s (according to the mental ages, which are not given in this paper), is that the maximum mental development has been almost reached. Those whose I. Q. remains about the same have shown a rise in mental age corresponding to the increase in chronological age. The two cases whose I. Q. rose showed a greater rise in mental age than would be proportionate for the increase in chronological age. Undoubtedly any rise is due to not so much actual increase in mentality as it is due to the ability of the patient to cooperate better in the testing as a result of improved physical capabilities.

It has been said[3] that "given a child with an I. Q. of 80, a great deal can be done." Obviously, according to our results, we may be more optimistic. The important point is not the degree of intelligence, but rather the degree of cooperation and initiative. If the patient does as he is told, chances for success are enhanced, but if he does not cooperate well, poor results follow, whether the I. Q. is 30 or 130. It goes without saying that enough intelligence for cooperation must be present.

We obtain the I. Q. by testing with the regular Stanford revision of the Binet-Simon Test. To be sure, the test is a most unsatisfactory way of measuring intelligence in these cases, due to the fact that many cannot properly use their arms or their voices. However, until better tests are developed, we are forced to rely on our usual methods of testing. Further, when these children can use their limbs, and when speech is corrected to an understandable degree, a fairly accurate testing should be accomplished, provided

the psychologist doing the testing can interpret the results judiciously.

Prior to the efforts for their rehabilitation, most of these patients were considered to be idiots. Later, as interest grew, and enthusiasm was aroused, most of them were thought of as normal, with the explanation that their physical handicap made them seem defective. We fell prey to the same fault that assails so many parents, namely, regarding any accomplishment of the child as a "normal finding." This brings to mind an illustration: A normal, intelligent woman showed the writer her 16-year-old son, obviously defective. She said, "He is really not defective; he knows how to turn on the radio and listen to whatever programs he likes," forgetting that any 5- or 6-year-old child can do the same, and that a 16-year-old boy should be half the way through high school. Likewise, in our daily contacts with these children we are prone to forget that normal children can think on a much higher plane than do most of our children.

Probably a conservative attitude of guarded prognostication is best in regard to the intelligence of most of these children; some may actually be higher in intelligence than is evident, while others will never be normal. The future of each individual case is a separate entity. However, we must not forget that *brain damage severe enough to produce spasticity or athetosis, or both, will in many cases also impair the intellect.* It may be well to emphasize here, as Carlson points out,[4] that these individuals with cerebral palsy cannot be made into normal people, even if their mentality is normal. They will always require more or less continued observation and guidance in order to maintain the level of improvement. Yet, if we take an apparently hopeless bed patient and teach him to walk, speak intelligibly, dress himself, feed himself, and take care of his personal needs, we have accomplished a great deal.

Most of the current work of this sort seems to be centered on the proven mentally normal child. An I. Q. of 80 or 85 is demanded in most institutions before the child will be accepted for treatment; very few institutions treat the type of case we have at Newark. Consequently, a large proportion of patients with cerebral palsy who might be benefited are never admitted to treatment. If, however, three-eighths of the cases treated improve in our hands, then

it does seem advisable that more schools for mental defectives should institute this type of work. Certainly these "forgotten children" merit the opportunity to live the normal and happy lives that are possible for them.

Newark State School
Newark, N. Y.

REFERENCES

1. Sharpe and Maclaire: Quoted by Rosanoff, A. J., in Manual of Psychiatry, 7th Ed. John Wiley and Sons, Inc., New York, 1938.
2. Smith: Quoted by Rosanoff, A. J., loc. cit.
3. Brockway, A.: Problem of the spastic child. J. A. M. A., 106:1635-1638, May 9, 1936.
4. Carlson, E. R.: Treatment of birth injuries and related problems. Arch. Phys. Ther., 181: 708-710, November, 1937.

ACUTE HETEROSEXUAL INADEQUACY

II. *In the Female*

BY JANE E. OLTMAN, M. D.,* AND SAMUEL FRIEDMAN, M. D.**

In a previous communication[1] we described a psychological phenomenon in the male which we termed "acute heterosexual inadequacy" or "acute heterosexual failure or panic." In brief, it was pointed out that certain individuals, especially those reared in a strict home and by a devoted, possessive mother (with resultant inadequate resolution of the Oedipus complex and pronounced mother fixation) are unable in adult life to liberate themselves from the incestuous implications of any impending heterosexual relationship. These unconscious conflicts and guilt reactions precipitate the acute heterosexual failure or panic. The latter in turn is accompanied by bitter feelings of inadequacy in the psychosexual sphere. Thus there may be seen on the one hand a tremendous resistance to heterosexual potency imposed by its incestuous implications, and on the other, a rival struggle to establish this very potency, at least in the psychological sphere, and thereby overcome the stigma of psychosexual impotence. The panic state may find various degrees of expression ranging from mild anxiety states to acute psychoses. In the present report we will describe the occurrence of this interesting psychological phenomenon in women.

It may be stated initially that acute heterosexual inadequacy or panic, like the homesexual panic, apparently occurs less frequently in the female than in the male, and in not so well crystallized form. Certainly fewer cases, in whom this factor may have been the causative agent in the production of the acute psychosis, were seen among the female patients of this institution. The possible reasons for this will be discussed later. On the other hand, relatively minor disorders of this type are probably quite frequent, although no special nomenclature has been assigned to them previously. Menninger[2], for example, cites the following case:

Recently a patient who had been engaged to a professional man postponed her wedding date for the fifth time. This exasperated her fiancé and he insisted that she come to us for examination. The history recited many attacks of typical anxiety hysteria with much right-sided abdominal pain.

*Psychiatrist, State Farm for Women, Niantic, Conn.

**Assistant physician, Fairfield State Hospital, Newtown, Conn.

Time after time she had been examined by physicians who were in doubt as to whether or not to operate. The leukocyte count was occasionally as high as 12,000 but it must be added that the following day it would fall to normal. (Cases of pseudo-appendicitis have been reported in which even the fever was not lacking). Finally the patient actually begged for an operation and it was performed. Her attacks of panic and pain in the lower right abdomen were relieved only, however, until the approach of the postponed wedding date. Then they all returned and again she insisted upon going to a hospital. In such a case it is quite evident that the demand for surgery is only a choice of the lesser of two evils as a way to escape a heterosexual relationship which her infantilism made it impossible for her to face. Other motives contributed but this one was conspicuous.

Here is an example of a woman who was quite incapable of surmounting the psychological difficulties which blocked her path to any sexual rapprochement. Thus the threat of a heterosexual relationship imposed by the setting of a wedding date crystallized her psychosexual inadequacy and she escaped, panic-stricken, by some psychological subterfuge. In this case the disturbance was relatively mild and found expression in the form of anxiety-hysteria attacks.

Our cases, drawn from patients admitted to a state hospital, represent more extreme instances of psychological and emotional distress. The following abbreviated case histories are representative examples.

1. B. R., 31 years old, single, a clerk. The only significant feature in the family history was that the mother suffered a relatively brief menopausal psychosis. The patient was the oldest of 10 siblings. In infancy she had proved to be a difficult feeding problem and was said to have weighed only nine pounds at nine months of age. During the second year of life this delicate, frail state of health disappeared and she progressed satisfactorily thereafter. Her school work was average. During the preceding several years she had worked as a clerk in the office of her father's dry cleaning establishment and seemed to enjoy this. Concerning personality traits, she was characterized as a quiet, home-loving individual, withal friendly and sociable but not aggressively so.

About a year prior to her hospitalization she became interested in a young man and eventually they were engaged. He was greatly attached to her and this devotion, at least initially, seemed mutual. Concomitantly with the announcement of their engagement the patient began to exhibit evidence of some emotional disturbance. Insomnia was marked; she insisted on

sitting up late every night, maintaining that she could not sleep. In addition she apparently became quite jealous accusing her fiancé of being "crazy about somebody else" and uttering all manner of suspicious allegations against her friends. She herself abruptly postponed the wedding date several times. Her precarious adjustment finally collapsed entirely about three weeks prior to her commitment. Emotional instability was then marked. She assumed an air of martyrdom and expressed the belief that her entire family was being subjected to persecution. In a local hospital she was resistive, assaultive and occasionally mute; at the state hospital this behavior continued unchanged.

Only a few fragments of her mental content were obtainable. The following were of interest: Of her fiancé and her relationship with him she affirmed, "I planned to marry him. I supposed I was happy but I didn't understand everything exactly. I guess I wasn't feeling well enough to go out with anyone steadily." She also stressed the grave responsibilities entailed by marriage, such as caring for a home and family. Finally, when her condition had improved somewhat, she asserted her belief that, in view of her illness, her fiancé would probably attempt to terminate their engagement.

This patient is an excellent example of a psychosexually inadequate individual. Her failure to marry by 31, despite a fairly attractive physical appearance, is in itself some indication of her unconscious resistances in this regard. Finally, however, she does permit herself to become interested in the attentions of a young man. The insomnia following the announcement of their engagement is a well-defined manifestation of anxiety and indicative of her growing conflicts. Her own feelings of inadequacy in the relationship and her inability to assume sexual and marital bonds are projected outward as suspicions concerning his fidelity to her and upon these suspicions she also lays the foundation for casting off the blame for disruption of their companionship. The impending catastrophe, signified by the approaching marriage, is postponed as much as possible but the temporary respites are insufficient security to a tottering ego and there is a final flight into a psychosis. Here she attempts to rationalize her psychosexual inadequacies and deficiencies, partly on a physical basis, that is: "I guess I wasn't feeling well enough to go out with anyone steadily." She implies that the gravity of marriage is too much for her. Finally she expresses the unconscious desire that her psychosis will prove to be

an effectual means of terminating the engagement and will thereby forever relieve her of her fears.

2. L. L., 22 years old, single, a nurse. The family history reveals that the mother suffered a "mild nervous breakdown" without hospitalization, before her marriage. The father is quite deaf. The patient was the elder of two daughters born to fairly strict Roman Catholic parents. There was nothing especially noteworthy, at least from a superficial standpoint, in her earlier life. She was graduated from high school at 17. Thereafter she worked in the mills for a year or two and at 19 entered nurses' training school from which she was about to graduate when her illness occurred. She was characterized as a quiet, studious, generous and sympathetic individual who, although not socially aggressive, had made a number of friends of both sexes. For the past year and one-half she had been most friendly with one young man but she broke off this friendship, without any apparent reason, at about the time she first became somewhat ill.

About three months prior to her admission to the state hospital she presented the first overt evidences of her impending breakdown. She was "nervous," insomnious, apparently physically weary and unable to finish her training course, of which only a week or two remained. Her physical restlessness and overactivity increased and she was admitted to a private institution. Here improvement was fairly rapid and she was discharged within a month with a diagnosis of psychoneurosis, hysterical type. She did not return to work, however, and two weeks later grew excited, talked incoherently and exhibited extreme emotional instability, whereupon she was committed to the state hospital. Her clinical course alternated between periods of excited volubility and episodes of semimute stupor. Later she acknowledged having been hallucinated in both visual and auditory spheres and having experienced ideas of unreality and vague nihilistic phenomena, as well as subjection to external influences.

Again she improved fairly rapidly and was able to reveal the significant factors contributing to her illness. She gave evidence that she had been experiencing definite conflicts with respect to her male friend. Although he had made no actual physical overtures he had given her several hints of his desires with respect to sexual intimacy. The patient, reared under a strict moral code, had thrust these ideas aside and suppressed them rigorously. She was vague in explaining the dissolution of their friendship and affirmed that originally they had intended to become engaged in June (three months before the onset of her illness) but she had postponed this move on the superficial basis that "they were too young to commit themselves definitely."

Here again may be seen inability of the individual to face a prospective sexual relationship which is made the more imminent by intimations of her lover's desires. Early inkling of this inadequacy is gained by her postponement of the couple's engagement on the pretext of their youth. The impending threat was apparently not adequately warded off by this postponement and finally her conflicts demanded complete dissolution of their friendship. By this time, however, her anxiety had extended beyond bounds and was expressed externally as a panic which is recognized initially as an "hysterical" episode. The repression of sexual conflicts is indicated later by her unwillingness to face these issues, as demonstrated by the vagueness of her discussion of reasons for breaking off with her intended fiancé.

3. B. S., 22 years old, single, a clerk and stenographer. The family history was negative for nervous and mental disease. The mother was an overindulgent and demonstrative individual; the father was passive and alcoholic. The patient was the eldest of four siblings. Following graduation from high school at 17 she assumed steady employment as a clerk. With respect to personality, she was rather serious, shy and retiring, especially with members of the opposite sex. She was closely attached to both parents and especially to her mother, prefering the latter's company to association with young people of her own age. In addition she was especially fond of her youngest brother, nine years of age, who was her favorite. She was guided by a rather rigid moral code and disliked drinking and smoking.

Some eight or nine months previously she had begun to associate fairly regularly with a young man. It was apparent, however, that the relationship was disquieting to her. She expressed an ambivalence toward him, asserting on the one hand that he was too good for her and spent too much money on her, and on the other, debating with herself for hours whether he was a proper person with whom to associate, especially since he was said to drink occasionally. Finally she relinquished the friendship, by which time she had become nervous, insomnious, brooding and emotionally unstable. She experienced increasing difficulty with her work. About a month later, following the death of her favorite young brother after a severe illness, her compensation broke entirely. She upbraided herself and expressed guilt feelings with respect to the adequacy of her care and devotion to the boy during his illness. Thereafter she complained of headache, inability to concentrate and feelings of unreality and finally took an overdose of barbital, presumably with suicidal intent.

In the hospital the outstanding symptoms were anxiety and vague feelings of unreality. However, she was always in good contact. During this period the patient turned against her mother, blamed the latter for her troubles and expressed the idea that the mother did not understand her. She asserted that she had always been afraid of doctors, especially male physicians; she also feared pain and acknowledged that perhaps one reason for her wish never to marry was her fear of pain (in other words, the pain of childbirth).

This patient also adhered to a rather rigid moral code. Her social life was limited. She was closely attached to both parents and despite the fact that consciously she favored her mother, it is significant and suggestive of her unconscious antagonism toward the latter that during her psychosis she turned against her. Similarly her overattachment to the young brother implies possibly a transference of affections from the father, that is, an inverse Oedipus or Elektra situation. Conflicts over her friendship with a young man are expressed in her doubts concerning him and their relationship, and by her increasing anxiety. Complete unheaval of her psychological equilibrium was precipitated by the death of the brother to whom she had been so attached. No doubt her unconscious incestuous guilt was emphasized by this event. To the psychiatrist she rationalized her reluctance to face the marital relationship on the basis of fear of childbirth pain—a rationalization which is probably not infrequent in the general population.

4. M. M., 19 years old, single, a millworker. The family history was negative for the occurrence of nervous and mental disease. The patient was the second of six children born to French-Canadian immigrants. Following a rather mediocre school record she began to work in a domestic capacity and later in mills. In general she was of a placid, unaggressive temperament and fairly well socialized.

For several months she had been especially interested in one young man. Gradually, however, she became rather apathetic; eating and sleeping habits were poor and she lost weight. She seemed concerned solely about her friend whom, however, she had seen only occasionally during the past few weeks. Repeatedly she asked to be with him and during the week before hospitalization she refused to eat, affirming that she must see him before she ate.

In the hospital she was in poor contact and actively hallucinated. She asserted that people "hear me talk in my mind," implying that she could

communicate with others through the medium of her mind. She insisted that two days prior to hospitalization she and her friend had been married in this manner—"through my mind." She had been able to phantasy the priest and had heard him utter the words by which they were wed. She also expressed vaguely the delusion that she had given birth to three babies during a "dream state" as follows: "I dreamt I was driving a car . . . I pulled the brake up, leaned over and felt the babies. I just saw them . . . I didn't really think they were mine but they felt like mine . . . when I stooped over I felt I must take care of them." In addition she complained of feelings of subjection to external influences. Certain malefactors seemed to be pursuing her for the purpose of obtaining some sort of invention of hers with which they might keep her and her friend, or supposed husband, apart.

This patient seems to be a generally inadequate individual, and especially is her immaturity evident in the psychosexual sphere. Her first more than casual friendship was apparently sufficient to precipitate a psychosis, in which the usual manifestations of acute anxiety or panic reaction are not strongly in evidence. Her delusions of having been married and given birth to children are of the wish-fulfilling type commonly seen in the male who is suffering from this type of psychosis. Such delusions, however, are not characteristic of the female. An interpretation of this difference in symptomatology will be offered later.

5. B. B., 16 years old, single, a university student. The significant features of the family history are as follows: The father, a minister, was an extremely rigid, strict and undemonstrative individual; the mother was cast in the same emotional and behavioristic pattern. The eldest brother, a brilliant university graduate, had mysteriously disappeared a few days before his marriage and had not been heard from since. One sister was a cleric. Another sister had been involved in an affair with a married man and had borne an illegitimate child by him; in the case of another sister, marriage had been necessitated by an illegitimate pregnancy.

The patient was the eleventh of 12 siblings. As a youngster she was precocious and continued to be a brilliant student, graduating from high school at 15. Thereafter she worked temporarily as a waitress and as a nursemaid; her employment was interrupted by her admission to a psychopathic hospital. In the autumn, a few weeks before admission to the state hospital, she entered college. Regarding personality traits, she was considered to be an imaginative, day-dreaming, rather moody, but hard-working and brilliant individual. Her social life was definitely restricted; the family ties

were close. She accepted passively, at least from external observation, the rigid discipline of the parents and their intense religious fervor.

On Easter Sunday, following church services, she had accompanied an unknown man, about fifty years of age, to his home. (She confessed later that she had become increasingly curious about sexual relations. She further asserted that although she had not enjoyed this initial experience, neither had she experienced any conscious revulsion). The following morning she behaved as though she were "in a daze." Before leaving the man's apartment she cut off her hair in a mannish bob and donned masculine clothes. She was observed throwing her own clothes into the neighboring river. This and other suspicious actions led to her admission to a psychopathic hospital. Here she seemed to recover within a few days. Her most significant comments were those illustrating her desires to change her identity.

Thereafter she was able to return to work as nursemaid but she was harassed by powerful impulses to choke the baby for whom she was caring. These impulses were accompanied by terrific anxiety attacks and reactions to guilt feelings. In the fall she entered college but within a very short time her behavior again became peculiar. She wrote threatening letters to her roommate. The night before her admission to the state hospital she became acutely disturbed, thought that the baby for whom she had cared was lying on her bed and that she had choked it to death. She appeared panic-stricken, talked confusedly of dying and managed to obtain a razor. Although this was snatched from her she succeeded in cutting her wrist with a piece of glass and also assaulted some of her classmates.

The most significant feature of her appearance was the masculine nature of her clothing, haircut, behavior and manner. In the hospital she quickly recovered her composure and could offer no explanation of her disturbed episode.

In the light of the common factor of a rigid, strict, religious background, the psychosexual difficulties experienced by this patient's siblings are of interest. The history of the eldest brother would suggest an acute heterosexual panic on the eve of his marriage. Two sisters seemed to exhibit an overdetermined reaction to their repressive environment, as indicated by their sexual adventures. As for the patient herself, an episode such as that she ventured upon resembles, at least in part, a tremendously overdetermined drive to test her sexuality, even when one takes cognizance of her upsurging sexual curiosity which could find no adequate outlet in the abnormal home environment. The choice of a man of about fifty

years as her partner, smacks strongly of incestuous drives. Despite her actual testing of coitus one sees a psychological revolt and a tremendous unconscious revulsion with its attendant prompt rejection of the feminine role *in toto* to wit: cutting off her hair, assuming masculine attire and attempting to change her identity. This rejection of femininity is continued later in more chronic and subtle form. Homosexual conflicts also come to the fore and projection mechanisms in the form of threats to her roommate and assaults on her friends are in evidence. The overpowering impulses to choke the baby may also have been a renunciation of femininity and feminine sexuality as represented by pregnancy and birth.

* * *

In general one finds here essentially the same type of behavior and psychological dynamisms as was observed previously in the male sex. That is to say, there may be observed as a common factor the inability of the individual to respond normally to a situation which demands an adequate degree of heterosexuality. When confronted by such a situation (engagement and approaching marriage or even a close friendship with a man) which brings to the fore the impending possibility of a sexual relationship, the individual is unable to preserve her psychological equilibrium, becomes panic-stricken and is overwhelmed by an attack of anxiety-hysteria or an acute psychosis. This we have referred to as acute heterosexual panic or inadequacy.

Despite the essential unity of the underlying psychological process there exist certain differences between the two sexes with respect to the frequency, acuteness and other features of this syndrome. In the first place, this condition—at least in the acute phase which requires hospitalization—seems distinctly less frequent in the female than in the male. Several reasons for this present themselves. It may be recalled that it was postulated that the syndrome of acute heterosexual panic arose in great measure from the incestuous implications of any threatened sexual relationship; the incestuous fears, in turn, stemmed from, or were associated with an inadequately resolved Oedipus complex. Now it seems to be generally recognized that the comparable condition in the female (Elektra complex) is less well crystallized than in the male.* Certainly

*In fact, as Freud himself acknowledged, the entire sexual life of the female is shrouded in greater doubt and lacks clarity.

some factors, for example the suckling and care of the child, which are present in and strengthen the bonds of a mother-son relationship are absent in the corresponding father-daughter affinity. Accordingly unconscious incestuous difficulties may be less apt to arise from the latter relationship. From this it may follow that in adult life the specter and barrier of incestuous implications in any heterosexual relationship are less formidable.

In addition, from the standpoint of potency, the female has fewer demands made of her in the sexual act. In short, women are not afflicted with the male cult of potency. As was seen previously, the male in his moment of psychosexual failure is assailed not only by the heterosexual panic *per se* but by the cross-current of humiliation because of his impotence. However, the two states of sexual failure—impotence in the male and frigidity in the female—are not at all comparable from the standpoint of their effect on the individual. To the man it is a source of shame, of psychological upheaval should he experience failure in the sexual act. For the woman, however, frigidity in sexual intercourse is still almost a standard of "respectability"—at least such has been the feminine psychology and training until fairly recent years. To contrast the two attitudes one needs but recall that a man's boasting of his sexual conquests is quite acceptable whereas a woman's confession to similar activities would brand her. Thus, a part of the dynamisms at work in overthrowing the psychological equilibrium of the male is not participant, or at least only in minor degree, in the case of the female. Sexual failure or inadequacy does not arouse in her the storm of self-mortification experienced by the male. To this feature may also be attributed the relative infrequency with which the female experiences the wish-fulfilling type of delusions previously seen in the male sex (delusions of having had intercourse or sired children, delusions which would impart to the man a sexual adequacy of which in truth he had been so woefully lacking). Inasmuch as her ego does not demand the role of potency the female does not need to resort to such delusions.

It is apparent, then, that psychological, social and other factors make it easier for the female to accept a heterosexual inadequacy just as they have made it simpler for her to assume a homosexual relationship, various degrees of the latter being far more accept-

able than in the male sex. Allied with this phenomenon one finds that not infrequently and almost consciously, women renounce the feminine role with relatively little psychological conflict or opprobrium, whereas a comparable transposition in the male, especially if it proceeds to the extent commonly seen in that sex, is regarded as pathological. Modern civilization has rendered this step still easier for the woman. Renunciation of, and revulsion for the feminine role are but seldom manifested so acutely as they were in the case of B. B. (Case 5). One sees rather a more subtle inability or unwillingness to follow the feminine path either in the social or business world, or ultimately, sexually. Menninger[3] has described some of these behavior patterns and quotes the case of a patient who resented and rejected all her feminine activities and obligations and finally had both breasts amputated on the pretext that she might be developing a cancer in them. One of us has had experience with a similar case. Masculine striving of such severe degree may be infrequent but various lesser grades of this phenomenon are within the experience of everyone.

Thus it appears that several factors are effective in limiting the appearance in the female sex of acute panic reactions in response to heterosexual inadequacy. Not only do well-defined incestuous struggles participate less often than in the male sex, but furthermore the psychosexual inadequacy, when it is present, is more apt to assume a more chronic, subtle form with lifelong rejection of the feminine role. Because of various psychological and cultural factors the latter pattern of behavior is much more acceptable than is corresponding behavior by the male.

REFERENCES

1. Oltman, J. E., and Friedman, S.: Acute heterosexual inadequacy. I. In the male. PSYCHIAT. QUART., 12:669, October, 1938.
2. Menninger, Karl A.: Man Against Himself. Harcourt, Brace and Co., New York, 1938.
3. Menninger, Karl A.: Somatic correlations with the unconscious repudiation of femininity in women. J. Nerv. and Ment. Dis., 89:514, April, 1939.

Footnote:—The case material was obtained at the New Hampshire State Hospital, Concord, N. H.

BOOK REVIEWS

Moses and Monotheism. By SIGMUND FREUD. Alfred Knopf, New York, 1939. 216 pages with glossary and index. Price $3.00.

Was there a great national hero, Moses; did he exist save in legend and myth? Should he be likened to Hercules, Samson, Romulus? One may say: "Yes. Each of these individuals must have had an existence; it would be beyond reason to assume that their biographies were evolved out of thin air." Then the question arises as to what extent his real accomplishments and personality have been obscured by distortion and magnification, which is and was regularly a part of oral history, repeated by fathers to sons in ancient days. Indeed, this distortion in order to add to the reputation of a departed hero is common enough in manuscript and printed record. One could hardly expect that it would be absent in a record which was for long periods only traditional.

If Moses lived and wrought the deeds with which he was credited, it was at a time at least 13 centuries before the Christian era. The role of the historian in that distant age must have been different from what we conceive it to be today. Even as late as the time of Marco Polo, history was intended to entertain hearers and glorify heroes, and little attention seems to have been given to accuracy of statement. The minstrels were historians and biographers and the records which make up the Old and New Testaments have without doubt undergone, with frequent repetition, distortion, elimination and addition. The great pains taken by biblical scholars, as in the St. James version, to diligently compare existing texts with the original Hebrew and Greek versions were utterly futile, for the errors had been committed long ages past by the Hebrew poets, orators and minstrels. Indeed, we may be sure that poetic license is nothing new.

This tendency to falsify history has been universal, and so it is useless to hope to find coherency in any of the ancient records of Ninevah, Babylon or Israel. The past is obliterated, except in its boldest outlines and cannot be reconstructed in detail. Says Andrew D. White: "Myth, legend and parable seem, in obedience to divine law, the necessary setting of these truths (of religion) as they are successively evolved, ever in higher and higher forms. What matters is, then, that we have come to know that the accounts of Creation, the Fall, the Deluge and much else in our sacred books, were remembrances of lore obtained from the Chaldeans . . . more and more we see how long and patiently the forces in the universe which make for righteousness have been acting in and upon mankind through the

only agencies fitted for such work in the earliest ages of the world—through myth, legend, parable and poem.''*

Under these circumstances, Freud's undertaking to reconstruct the history of monotheism and the life of its founder, Moses, upon lines of evolution of the individual personality, has much to recommend it. The biological evolution of the individual reenacts the biological evolution of the species. Haeckel's hypothesis is generally accepted as true in its broader aspects. Freud would apply a treatment similar to Haeckel's formula and make it applicable to the instinctive strivings of tribes and nations. Such comparison would be particularly apt with respect to the Hebrews, who have always been a group compact in thought, feeling and expression. It seems to the reviewer that this treatment will uncover more truth than could be gained from adhering closely to available myths and legends. The analytic method would not furnish the details which the myth and legends would supply, but the analytical approach would not fall into the error of accepting the legendary material at its face value. On the contrary, it would interpret such material in the light of what psychoanalysis has revealed to be true of all mankind. The primitive strivings which motivated the behavior of the Israelites are but reflections of primitive behavior wherever it is met with, and would be found to be true today as it was in that remote period when Moses lived. Such an analysis has already been done by Freud in his illuminating study of primitive mind and morals which forms the basis of his well-known work *Totem and Taboo.* This study was first concerned with the habits and beliefs of the primitive Australians. For those who rely upon what they call historical documents this method may not be acceptable. They would put greater credence in a prehistoric inscription found perhaps upon a Sumerian tile. Nevertheless, the psychoanalytic approach has its value, and when taken in conjunction with myths and legends may yield truth, and errors contained in tradition may thus be recognized.

Genesis and Exodus are believed to have been written from oral tradition about the time of the Babylonian Captivity, at least 1,000 years after the passage of the Red Sea. Biblical scholars are rather well agreed that long periods elapsed between completion of the writings which compose the Pentateuch, from the seventh century to the fourth or third century before Christ. The contradictions to be found in the books comprising the Pentateuch are examples of the confusion resulting from bringing together many traditional accounts. Biblical scholars recognize two accounts, which are designated as the Elohistic and the Priestly codes. The former is that of the people, the fireside stories. It is simple, primitive and naive. It portrays God as a simple, kind old man, walking in his garden in the cool of the evening, conferring with Adam and other patriachs; whereas the Priestly

*-'From Babel to Comparative Philology."

code places emphasis on ritual or law. They are curiously intermingled in Genesis. The Priestly code is more austere and mature. Though sometimes these records are contradictory and confusing, they appear together. There are several sets of prohibitions similar to those which may be read in the twentieth chapter of Genesis and are commonly known as the Ten Commandments. The latter are clearly a part of the Priestly code; others such as in Exodus xxii:16-29, and xxiii:1-20, are manifestly of the Elohistic.

The task to which Freud addresses himself is the establishment of the true nationality of Moses. He begins with the name itself, which in the Egyptian language means *child,* in such combinations as Amen-Mose, Ptah-Mose. The name appears on many Egyptian monuments. The final "s" does not occur in Egyptian or Hebrew; it first appeared in the Greek translation of the Pentateuch. Freud next concerns himself with the practice of circumcision; authorities seem to be agreed that it was a long-established Egyptian rite, but not practised by the Hebrews until after the Exodus.

In the Eighteenth Dynasty, after conquest had largely extended the boundaries of the Empire, the rulers of Egypt were at their zenith. Toward the end of that dynasty monotheism was instituted by the Pharaoh Amenkotep. The new religion was forced upon the people, replacing the ancient traditions and familiar religious customs. The older religion with its innumerable gods and goddesses, great and small, had existed from immemorial times and many of the deities were quite clearly figures representing totems of scattered tribes before they were united under the banner of Egypt. The new religion of Amenkotep was the purest and most rigid form of monotheism. It originated among the priests of the Sun Temple at On, and the king appears to have become converted at an early age. It repudiated polytheism, a lenient and popular theology, and substituted for it one universal god, austere and relentless. Everywhere in the kingdom the temples were closed and every reference to the old order prescribed. Osiris and the realm of the dead were ignored, as was every conception of Hell and life after death. Demons, spirits, demigods, incantations and magic, all of which were dear to the hearts of the Egyptians, were swept away. Aton was the name of the universal God; no other could be called upon or worshiped. Breasted, the historian, calls Ikhnaton "the first individual in human history." His reign lasted but 17 years, and upon his death, the circumstances of which are shrouded in mystery, a religious revolution took place. The new Aton religion was repudiated and the old, comfortable beliefs of the people were restored. With the death of Ikhnaton the glorious Eighteenth Dynasty came to an end. Following it was an interval of eight years with no king and the country was in a state of anarchy.

Here it is necessary to depart from historical security, even such as may be gained from manuscripts or the engraving on tombs and temples, for the drama out of Egypt into the wilderness. The cult of the priests of the Temple at On where the Aton religion had been nurtured and developed, could hardly be expected to acquiesce in its obliteration. It is more probable that they continued secretly to practise and cherish it, and kept its tenets alive awaiting a time when it might be restored. If that possibility did not appear upon the horizon and their hopes and aspirations seemed fated to perish, what would be more natural than to think of an abode elsewhere, where their religion could be practised without hinderance? Removal out of Egypt was the answer, but an undertaking so perilous and uncertain required the security of numbers. A party of priests, even with their families, servants and retainers would not be able to maintain themselves over a protracted journey to an unknown destination. Hardy men accustomed to toil and exposure should form the bulk of the expedition. If, as there is ample reason to believe, Moses was a prince and high in government circles, possibly himself of the priestly cult and one-time governor of the province of Goshen, where a considerable number of Israelites had settled, who else than he would command their confidence and support as a leader?

The disturbed political situation which followed the death of Ikhnaton favored the revolt of the enslaved Hebrews, and the latter, dominated and directed by the priestly group under the leadership of Moses, succeeded in leaving the country. In southern Palestine or southwestern Arabia they were joined by other nomadic tribes of Semites who worshiped a heathen god named Jahve, whose home was in or near a volcanic mountain. It was not Mount Sinai, for that mountain has never been volcanic, but in western Arabia there are evidences of active volcanos existing in relatively recent eras. The Israelites were guided on their way by a pillar of cloud by day and a pillar of fire by night. The Book of Exodus contains many references to discontent and rebellion on the part of the tribes against the leadership of Moses. They lacked food and water and they were irked by the austerity of the new religion, which had been imposed upon them from the outset of the journey by the leader and his priestly followers. The latter now constituted the tribe of Levites. They were clearly different from the rank and file of the Hebrew emigrants, for they were entrusted with the responsibility for maintaining the new religion and evidently stood closer to Moses than did the others.

The career of Moses and his followers in the establishment of monotheism furnished excellent material for Freud to elaborate his theory of the origin of religion. The formulation of this conception is the basis of that original and almost sensational book *Totem and Taboo,* published more than

twenty-five years ago. This revolutionary exposition of the sources of religious devotion in feelings of guilt and fear, and of the impulse toward expiation, created a storm of opposition from representatives of theology who adhere to a different and conventional, hence artificial, explanation. The two points of view are irreconcilable for the reason that the latter is founded on adult or rational conceptions. Freud, than whom no other has attained so deep an insight and understanding of the primitive mind and emotional impulses, sees religion as something evolved within the human being in response to primitive needs and not handed down from on high, ready made. Students of anthropology and folk lore can see the force of this reasoning, for they recognize it as related to the broad general plan of evolution, somatic and psychic, from the primitive and inferior to the higher and nobler.

Freud postulates the beginning of the human race as a family group dominated by one powerful male, the father who appropriates the females and is hostile to the sons when they prove to be rivals, driving them out to fend for themselves. The latter after a time find courage and opportunity to band together against the father, destroy him and "partake of his blood," as was the custom in primitive savage days. The purpose of the cannibalism was, of course, the same as wherever practised: to acquire by the principle of contagious magic the strength and potency of the enemy. Upon the death of the father the brothers found their situation no better than before, for each wished to assume his place and they fought among themselves frequently.

At length they came to see that peace could be obtained only if each renounced the idea of retaining for himself the mother and sisters, and recognized them to be unattainable. Thus the taboo of incest came into being with the law of exogamy—the beginning of morality and law. The father ideal became glorified when he was no longer present, and the sons felt the loss of his strength and courage in combat with common foes. In his place a strong animal was selected to be the head of the brother horde and was revered and worshiped as protector—the totem. A large share of the power which had been exercised by the father upon his death passed to the mother and the period of the matriarchate arose. The choice of an animal to be the father ideal, and in the course of time the god, was not so strange as might at first seem, for in those primitive days the differentiation between man and the so-called lower animals as controllers of nature did not exist. The latter were esteemed for their strength or cunning and were not held to be inferior, an attitude prevailing today among small children.

Freud sees a parallel between the primitive family horde and the emigrant Hebrews. Their discontent evidently was serious and their attitude

threatening. There are numerous references in Exodus to their discontent and complaints of the hardships they endured from hunger: "Would to God we had died by the hand of the Lord in the land of Egypt, when we sat by the fleshpots, and when we did eat bread to the fill"; and from thirst: "And the people would chide with Moses and said 'give us water that we may drink' . . . And Moses cried unto the Lord, saying What shall I do unto this people, they be almost ready to stone me."

It is Freud's theory that his followers did finally turn upon Moses, killed him and joined with other tribes, forsaking the new religion and adopting for a deity the heathen Jahve who was reputed to live in the volcano.

Freud refers for support at this point to Ernst Sellin, who interpreted references in the book of Hosea and in the Prophets to imply this meaning. The leader who was chosen, or who seized the leadership, also was known as Moses, now distinguished by Biblical critics as the Midianite Moses who did not restore the abandoned religion, which passed into a period of latency for several centuries. Its tenets however, were cherished and kept alive as in former days by a small section of the Levites, descendants of the priests of the Temple of On who had accompanied Moses and shared the hardships of the Exodus. Several centuries later under the influence of the prophets the monotheistic religion was gradually revived and became reestablished. The many references, contained in the books of the Prophets, to the existence of idolatry indicate that the reinstatement was gradual and slow. The memory of the crime of patricide became a dominant note and gave rise to the sense of guilt that was emphasized in the lamentations of the Prophets. This took hold upon the Jewish race at that period, and its corrolary, the dream of a Messiah who would be Moses, returned to life. He would redeem the children of Israel of the burden of guilt and lead them again to world conquest and power. This motif is the theme of the lamentations of the Prophets and of Paul's doctrine of original sin. If this be true, the history of the revolt and murder must have been preserved secretly by the priesthood in the secret archives but carefully excluded from the written record.

Freud's ingenious theory is maintained with masterly skill. Its weakness, as he himself points out, is that he makes use of biblical and historical accounts when they lend support and coherency to his argument and summarily rejects them when they do not serve his purpose. This method at first glance seems to be inexcusable but it is postulated that the biblical accounts are the work of men who employed traditional history for no other purpose than to enhance the importance and continuity of their religion, and themselves gave no consideration to historical accuracy. It was too painful to record that monotheistic religion and the practice of circumcision were derived from the Egyptians. Though there is available ample evidence

of this truth it could not be admitted, so both are moved back to the time of the patriarchs and earlier. It would not do to admit that the Hebrews revolted against the true religion and for generations had worshiped Jahve, the demon who lived in the volcano. Accordingly, that incident was likewise suppressed although the reading of the biblical text still shows evidences to support it. Freud seems to believe that as the ancient chronicles employed eclectic methods in recording history he was justified in eliminating what he deemed to be spurious or falsified. He sees a parallel between the childhood of the individual and the childhood of the race or species. On reflection one can perceive such a resemblance outlined boldly. How far one can apply such a method to a specific situation and events without error cannot at that time be told. Critics unfamiliar with the psychoanalytic principles and method could not regard it as having any value at all. At least it may fairly be said that Freud has devised a new method for interpreting remote historical events. His authority as a student and interpreter of primitive and archiac phenomena puts upon us the obligation to give his opinions on any such subject profound study. There are but few individuals who are qualified to express an opinion on this matter at this time.

Clinical Studies in Psychopathology. A Contribution to the Ætiology of Neurotic Illness. By HENRY V. DICKS, M. A., M. D. (Contab), M. R. C. P. (Lond.) The Williams and Wilkins Company, Baltimore, 1939. 241 pages with index. Price $4.75.

This reviewer thoroughly enjoyed Dr. Dicks' monograph and feels that it demands rereading and careful assimilation.

The author's viewpoint is fresh, his manner modest, his presentation vital and clear, and his style very readable. He limits himself to the psychoneuroses in the broad sense, in that he includes perversions and addictions. The material is based upon more than 60 cases quoted in sufficient detail and in a manner to serve as a model for some psychiatric writers. With reference to one disorder he properly remarks that in the cited case material "... the psychopathology has practically emerged from the patients' own mouths ..." In the reviewer's opinion no forced interpretations of the situations are attempted. Although classifying himself unequivocally in the eclectic school Dicks gives full praise and credit to Freud and bases his psychopathology and technique firmly upon Freudian psychoanalysis. His differences therefrom are clearly stated. He points out that in his opinion many valid and valuable concepts (unacceptable to the psychoanalytical school), have been propounded by some who have seceded but were originally properly trained in that school. He further cites: the

gradual acceptance of an independent instinct of aggression (not currently "sadism"); the greater emphasis upon the instinctual drive of self-preservation at the expense of libidinal trends; the supplanting of "castration fear" by "fear of loss of love" or "loss of the mother." With reference to the ambivalent reception of Freud's findings Dicks "wonders how the course of medical history would have been affected if Freud had originally happened on a patient with a preponderant security problem, instead of a case of frankly sexual hysteria!" The author also makes full use of Adlerian and Jungian principles where they seem apt and frankly states his debt for other conceptions to his former chief, J. A. Hadfield. Still further, constant reconciliation of these views is attempted and he makes it plain that he is presenting his understanding of these borrowed concepts.

From a practical standpoint some remarks regarding technique may be quoted. He attributes some of the transference difficulties to the consulting room itself of the Freudian analyst who adopts the recommended simulation of studied detachment. Following Hadfield, Dicks advocates the direction of the process of association at times and under certain circumstances. This is clearly differentiated from any tendency to suggest content by the analyst. In his experience "dreams are a cartoon-like representation of a situation or a problem in analysis or in real life, relating to a past experience now under analysis, or to a fusion of such an episode with a present contingency which has aroused analogous feelings . . . " Dreams early in the analysis, he feels often present admirably condensed summaries of the entire psychopathology of the patient's illness. Parenthetically, he speaks of "the inestimable value of intimate contact with young children, as a corroborative method for the discoveries in the analytic consulting room. Much that would sound improbable in the phantasies and other clinical manifestations of neuroses in the adult is in the child seen in its natural and harmless setting and becomes at once more real and more accessible to our understanding. So when we meet with the morbid survivals and distortions of what was once good and normal, we are able to place them back into their proper perspective and restore them into functional harmony with the rest of the individual's psychic life."

The author of course addresses himself primarily to psychiatrists who possess a sound knowledge of, and clinical experience with, psychopathology.

Certain of his views may bear repetition here. Dicks considers anxiety to be the infantile form of fear, traces it back to the infant's reaction to "loss of the mother," and thus with Ernest Jones differs from Freud who maintained it to be a direct transformation of libido. In the adult he feels that it is always pathological but protective in function, "albeit the mechanism is a very archaic one and can only fulfill its role at the price of great suf-

fering to the patient and of varying degrees of emotional regression to significant fixation points in early childhood, from which the symptoms in which the anxiety clothes itself receive their special flavor. These symptoms are often diagnostic of a certain infantile phase, while sometimes they are highly individual and refer to actual traumatic events of that patient's life, yet at other times they are purely symbolic." He takes into account Cannon's concepts of the responses of the sympathetic nervous system and endocrines in emotional states of fear and rage. Thus he feels that anxiety arises where "the normal motor outlet of fight or flight has been dammed up owing either to actual helplessness of the individual or to inhibition by endopsychic sanctions of the superego type, producing a condition of psychic helplessness."

The author so firmly feels the truth of these conclusions that he appends the following generalization. It should point the most important lesson in mental hygiene, and indicates further that while we are preoccupied with older children the crux of the matter lies in an earlier period of development, as held by Rank but on other grounds. That is to say that *infant guidance* should be substituted for *child guidance*. His statement—

> It may be said with some justice that the psychic fate of an individual is determined by the resources at his command for allaying this early fundamental dread of loss of the mother as she appears for the infant. If for one of the above-mentioned reasons [loss of the nipple in feeding, prolonged absence of the mother, loneliness in darkness, and withdrawal of support whether in an actual fall or not] the individual has been made to suffer excessive anxiety for his self-preservation, and especially if he has felt from the beginning a sense of unwantedness or lack of warmth and affection, or has passed through a prolonged illness as a baby, the first conditions for the development of a psychoneurosis, quite apart from any inherited predisposition, are already fulfilled.

The close relationship, with similar underlying mechanisms, of certain cases of neurasthenia, to anxiety hysteria is discussed. The description of a cold, narcissistic mother who inspires admiration and identification in her daughter, to Dicks is almost pathognomonic of a phobia in the daughter. Analysis of the obsessional reveals a tyrannical superego, a drawing on the store of our racial past, and, as a primary stage in the child, the threat of his own overwhelming emotions with a feeling of helplessness and their projection into a phobic symbol. Anent hysteria the writer says: "Manifestly, not every tantrum of the child in the hysterical phase is concerned with sexual motives, and quite as manifestly to all but official Freudian eyes, not every case of clinical hysteria turns out to have a dynamic basis in sexual

wishes . . . There are, I feel, cases of hysteria which aetiologically have very little to do with a primary sexual basis, and are almost entirely concerned with the motive of monopolization or domination of the environment in order to remain dependent . . .'' In contrast the author had said earlier that he has seen but one case ''who has not on analysis shown some traces of disturbed sex-life.'' An interesting comparison is made relative to the ease with which the hysteric regresses to autoplasty (when ordinary anxiety mechanisms fail) and the obsessional lapses into magical and animistic forms of thinking. It is noted that both merely show the persistence of stages through which every child still passes, and that phylogenetically this conception places the hysteric at the more primitive level, contrary to the psychoanalytical view.

In an excellent chapter entitled The Play of Opposites, references to ancient philosophical and religious treatises, Jung's *persona* and *anima* concepts, ambivalency, and so forth, are made. It is Dicks' opinion that the union of opposites in the face of our sense of duality, is the aim of psychotherapy. This of course is the resolution of conflict—''a process of psychological growth and unification . . . within the limits of the patient's powers.'' Or again—''One way of describing the therapeutic task is that it should bring about the reconciliation between the self and its forbidden impulses (Freud) or inferior functions (Jung).'' The author views the symptoms in a quoted case only as an attempt at synthesis, at reconstruction and change in the progressive sense. Incidentally he feels that the fusion of sexual impulses with aggression is not a normal process but arises as a traumatic event: ''. . . when the child happens to be in a state of marked sexual excitement which is then frustrated. The rage thus evoked is itself a morbid exaggeration if not a perversion of the normal instinct of aggression.''

Perversions of sexual aim are interpreted from the same mechanisms as are demonstrated in the psychoneuroses. The term ''narcissistic'' homosexuality is introduced to imply that type wherein the object choice is often an idealized version of the patient himself. The author is puzzled that fetishism is rare in women despite the observation that bedtime reassurance rituals are as common in little girls. Dicks' view is that ultimately the fetish object is the breast. He concludes that ''at their [the sex-perversions'] root lie always the feelings and phantasies of deprivation of love fused with the hatred and fury thereby evoked . . . the whole thing turns round the factors of *reassurance against anxiety,* and the search for the lost position of being loved, sensuously gratified and secure, for the sake of which one will even attempt to surrender one's penis, granted the occurrence of certain early mechanisms . . .'' The author does not agree with

Freud in the ascription of psychosexual arrest to weakness of the ego in dealing with the impulses by reaction formation. He feels rather that "the persistence of these exaggerated sexual impulses is *not* a simple one, but is in *itself* a reaction-formation precisely *by means* of those impulses against deeper feelings of deprivation and loss of the mother, or the breast, to recapture which they are an attempt."

There is an admirable chapter dealing with abnormalities in sexual function. These are grouped under hypersexuality and hyposexuality. Impotence and frigidity, which comprise the latter, are interpreted by means of their various etiologies, viz: latent homosexuality, narcissism, obsessional states and hysteria. With reference to the second he remarks: "It is not altogether surprising that members of the military profession are quite often prone to this type of impotence." With reference to frigidity specifically and marital relationship generally Dicks makes a cogent observation: "It is of course noteworthy how frequently the woman's—and the man's—choice of mate will play into the hands of such complexes: the man, afraid of his own aggression, fails to understand the masochistic components which, in common with the Freudians, I believe to form an essential part of normal feminine sexuality. His guilt causes him to try to 'live up to' his ego-ideal of kindness and gentleness, to the profound unconscious disappointment of his partner, and to the possible wrecking of his relationship with her."

Drug addictions (alcohol and morphine) are discussed similarly along generally-accepted lines. Sandwiched in this section are some pertinent notes on treatment. He concludes that "drug addiction is the expedient resorted to by neurotic personalities of various types, when their other defenses or compensations have broken down. It has the two-fold purpose of serving the repressing forces (the ego-ideal) and the repressed tendencies which appear to be impulses belonging chiefly and ultimately to the oral phase of development at which level the original trauma must have occurred, and to which the thwarted love impulses of later stages regress."

In his conclusion Dicks ventures the opinion that the psychosomatic view will be the clinical approach of the future, and the hope, that "the time is not now so far distant when the corpus of medicine will once again achieve its own psychosomatic unity."

This reviewer heartily commends Dr. Dicks' monograph.

Social Forces in Personality-Stunting. By ARNOLD H. KAMIAT. Sci-Art Publishers, Cambridge, Mass., 1939. 256 pages. Price 2.50.

The title of this book suggests that the author has a rather large order to fill and one wonders how it can be done within the confines of 256 pages.

A perusal soon reveals the fact however that the title is misleading. For the book is more concerned with stunted personalities as social forces than with the effects of social forces on personality maldevelopment. Actually the most important reference (if not the only one) to the dynamic effect of social forces in shaping the personality does not appear until the reader is well into the middle of the book (page 107), and even here the sense is implied rather than stated, namely: "Social forces do not exist apart from the motives, the impulses, the wishes, the wills of men and women." In this statement lies the crux of the entire book but let us return later to that.

Kamiat starts his work with the assumption that most adults are "immature." This term is only vaguely defined when preceded by the words "intellectually, emotionally and volitionally." In the assumption of "immaturity" and its special meaning lies the great weakness of the book. Instead of employing the dynamic method of showing how and why an individual fails to "mature psychologically" the author's thesis becomes mere static description, with the bland assumption that man is immature and all evils spring therefrom. Of course one concedes some dynamism in what develops from this egg.

Another assumption follows sharp on the heels of this one. "Immaturity" is synonymous with "egotism." And when paranoia is defined as the "supreme form of egotism" it naturally follows that the totalitarian dictators ("supremely immature" therefore "supreme egotists") are paranoiacs; and their followers (collective) suffer from "collective paranoia." An attempt is made to prove these statements but since the proof is based on the assumption of human "immaturity" the reasoning is necessarily tautological.

The tautology of reasoning finds a more acceptable parallel in the cycle of social dynamics. This cycle is implied in the above quotation (first paragraph). It no longer becomes a question of what came first, the "immaturity" or the "social forces." The latter are dependent on the character traits of individuals. Thus individuals create social forces which in turn modify the development of other individuals. This modification of individuals must of necessity affect contemporary social forces—and so on through another cycle. It is this dynamic cycle which holds out a ray of hope for the development of civilization and is the basis of Kamiat's plea for a greater emphasis on tolerance, democracy, and cooperation in place of totalitarian intolerance and autocratic exploitation.

This reviewer finds himself in essential agreement with most of the ideas behind the book but many of the statements are badly formulated and will possibly be imperfectly understood. It is to be regretted that Kamiat is not a psychiatrist. And surely when one writes about "personality-stunt-

ing," this is not too much to expect. The sociologist without psychiatric training can describe the social milieu but when he describes its dynamic effects on personality he must have a knowledge of the dynamics of personality development. Kamiat's book would have profited greatly by a closer attention to the works of Freud. The psychoanalytic term "psychosexual immaturity" encompasses Kamiat's "psychological immaturity" and is much more revealing. Further, the essay on "sex patriotism" adds nothing but a superfluous turn of phrase to what has already been revealed by the psychoanalytic studies of homosexuality. It is further evidence of loose thinking when Hollingworth, the psychologist, is quoted as an authority on paranoia along with Bleuler, and Henderson and Gillespie. This reviewer was also surprised and disappointed to find no reference to the rather important contributions in this field of Otto Rank and Karen Horney. Withal the book is extremely interesting and well worth reading.

The Patient as a Person. A study of the social aspects of illness. By G. Canby Robinson, M. D., LL.D., Sc.D. The Commonwealth Fund, New York, 1939. 414 pages and index. Price $3.00.

This volume is, in essence, a report of an investigation of 174 unselected patients who were either admitted to the wards or treated in the dispensary of the Johns Hopkins Hospital. The investigation concerned itself largely with the emotional, personality and social problems giving rise to, or resulting from, illness. The author's procedures in remedial measures to alleviate these factors when they complicate treatment and convalescence, are also included. The final chapter sums up the findings and suggests lines along which the author believes the efficacy of medical care can be increased and spread to include in its effectiveness a large percentage of the ill in this country, both the acute and the chronic, but more particularly the latter. The greater part of the book is given over to case summaries; in fact each of the 174 cases is so presented, some in shorter and some in longer form, according to the importance of the material to the author's thesis; namely, that if diagnosis and treatment are to be really effective, they must be based on a study of the complete patient.

This, of course, is no new thesis. It has been preached in medical schools for decades. The chief drawback presented by the method of case study advocated by the author is its expense. He acknowledged this indirectly and has enlisted the services of medical social workers for his investigation. His plea for the use of his method is eloquent, definitely justified and above all granted by every progressively inclined man in medical circles. However, he neglects to mention the source from which the physicians and social workers engaged in this form of case study and treatment are to be reim-

bursed. This problem takes on increased importance in these days of budgetary restrictions and wailing over increasing taxation. It would seem that the indication is not so much for education of the medical profession along these lines but rather for education of the public, not only to look for these services but to bear their expense either by taxation in public institutions or actual cash payment for private sources.

There are defects in the investigation and its presentation. The cases are not entirely unselected, 20 of them having been referred by staff members for study presumably because their cases presented social and emotional problems. Psychiatry receives little attention, for despite a primary diagnosis of psychoneurosis in 45, or 25 per cent, of the patients, psychiatrists were consulted in "only three or four instances" where "prolonged psychotherapy was required or when *true mental illness* was discovered." In the light of our present theoretical and factual knowledge the psychiatric concepts which are used are entirely superficial. Tribute is given to Dunbar and to psychosomatic interrelationships but the term organic is used repeatedly.

Nevertheless, the book fulfills the purpose stated in the foreward: ". . . the human problems which surround the patient are not apart from illness, but form an important component of illness and that it is therefore the doctor whose duty it is to understand them." Robinson's study therefore deserves the perusal of those particularly interested in this field and should yield them source material as ammunition for further discussion.

Sketches in Psychosomatic Medicine. By SMITH ELY JELLIFFE, M. D. Nervous and Mental Disease Monographs. New York, 1939. 155 pages. Price $3.00.

If one may venture into prognostication in a book review it will not be impertinent to suggest that the decade just ended will be remembered by psychiatrists as a period of growth and maturation. Psychoanalysis began to emerge from its adolescence and promised to develop into manhood—young but certainly less sophomoric. Psychosomatic medicine was an inevitable consequence of this coming of age. The interrelationship between psyche and soma commended renewed emphasis which sounded the first toll of the death knell for the philosophy of psychophysical parallelism. This movement was aided and abetted by the founding within the last two or three years of several new magazines which are devoted to, or lean heavily upon, the psychosomatic point of view. Other germane publications attracted more attention. To the galaxy of these esoteric and yet almost all-inclusive works Jelliffe has added his "Sketches in Psychosomatic Medicine."

Dr. Jelliffe's style is, as usual, dynamic, vital and refreshing, as is his

viewpoint. One is forced to admire the courage of this man who writes (p. 8): "Nor shall I weary you with the mumbojumbo of the philosophers and metaphysicians who have squabbled and will continue so to do over mechanistic and vitalistic antagonistic hypotheses, nor with that equally threadbare controversial topic of the relationship of body and/or mind." This is indeed bearding the philosophical lion in his den. The man is neither self-consciously ashamed nor childishly afraid to assume that present-day thought has progressed beyond nineteenth century dialectics.

Not Freud alone has influenced Jelliffe's thought. The weight of Bergson's credo is definitely felt in the main theme which recurs again and again in the various essays: "As from minute to minute is to a billion years so are our conscious reasons for doing things to the 'unconscious' processes that really bring them about." Subordinate strains also recur. Jelliffe's original conception of conversion phenomena as being reversible processes which may at any time for a definite unconscious reason become irreversible is again explained. And from this there is the natural corollary of the indivisibility of the psyche and the soma: "Believing as I do that practically all of the manifestations of the bodily functions, physiologic or pathologic, must be viewed as a whole, then no single issue can be thoroughly understood without this 'as a whole' conception." Here indeed is a crystallization of psychobiology.

Jelliffe was a pioneer in psychosomatic medicine. His initial papers, first published in 1916 but written earlier, introduced a novel application of psychoanalytic principles. The present monograph comprises a series of 10 papers published (with three exceptions) in the past 10 years; the exceptions appeared around 1925. Each paper is a chapter in itself and deals with another phase of psychosomatic interrelationship. Cases of bone pathology, Dupuytren's contracture, myopia, hypertension, asthma, hyperthyroidism and others, are studied with the purpose of showing how psychic factors supported, and possibly determined the form of, the organic pathology. There is never any insistence that psychogenesis is the more important etiological factor but instead the emphasis is placed on the *mixture* of somatic and psychic elements. In addition to describing the cure of a psychosis through the cure of an organic ailment Jelliffe also discusses the converse phenomenon (reversibility): that is, the precipitation of a psychosis through such cures.

This monograph will not appeal to those readers who have some ambivalency toward psychoanalysis. But the progressive thinker will find much therein that is stimulating. All should find it interesting, to say the least; to such an extent in fact as to minimize the faults of the many typographical errors and the obvious lack of adequate proofreading.

Emotional Hygiene: The art of understanding. By CAMILLA M. ANDERSON, A. B., M. D. J. B. Lippincott Company, New York, 1937. 232 pages of text, plus references and index. Price $2.00.

This book, written primarilly for members of the nursing profession, should be no less interesting and valuable to the parent, teacher, social worker, cleric or other intelligent person. It deals with the art of living, the art of understanding, the art of human relations. Written simply, engagingly, intimately, and without adornment, its comprehension should not be difficult for any intelligent reader, even though he may lack a foundation in psychology and psychiatry. Following an introduction, the book is divided into three units. Unit one deals with the Biologic and Social Bases of Behavior; unit two with Personality and Adjustments; and unit three with The Emotions in Relation to Special Fields. This admirable book, a work of much educational value, should stimulate the reader to develop an insight into his own shortcomings; to understand those of others; to improve the stature of his own personality development; and to live a fuller, richer, and happier life in relation to his fellowman. The nurse who heads the principles of its reasoning should not only achieve this, but be a more mature, more creditable member of her profession; should be able to establish a better rapport with her patients; and be able to see them not as cases, not as mere collections of tissues and organs, with a single disease entity, but as living, struggling beings with problems, stresses, strains, and conflicts which require adjustments.

Therefore, this reviewer believes that the author has presented the subject as she proposed to do in the introduction to the book.

Syphilis and Its Accomplices in Mischief: Society, the State and the Physician. By GEORGE M. KATSAINOS, M. D. Privately printed at Athens, Greece, 1939. 676 pages and appendices. Paper bound. Price $5.00.

Dr. Katsainos in this book sincerely attempts to point out many of the defects which exist in the methods of those whose duty it is to administer treatment to the unfortunate victims of syphilis. It consists of three parts, in addition to a preface and an introduction. Part One is concerned chiefly with a description of the various stages of syphilis and information as to what the disease actually is. Part Two is devoted to a discussion of the treatment of lues including the use of mercury and salvarsan, a dissertation as to the curability of syphilis and to hygienic measures. Part Three consists of a discussion of the Wassermann reaction and some of its fallibilities, an epilogue in which Katsainos takes the opportunity to castigate

those who have failed to cooperate with him in the distribution of his book, and a treatise on eugenics entitled Marriage and Syphilis.

The reviewer feels that there are both desirable and undesirable features which characterize this publication. In the first place the enjoyment which the reader obtains from a book is materially lessened when he has to cut the pages one by one so that they can be turned. Many errors in spelling are to be noted and many conclusions are drawn with which there are grounds for controversy. Much space is devoted to philosophical matters which to many would seem uninteresting and to others impracticable in a work of this kind. As one reads the book he notices the many incidents in which the author caustically and meticulously criticizes medical men and institutions with whom he has come in contact in the United States. One senses that the author may possibly be a physician who has been frustrated in some of his pet ambitions and who takes the opportunity through the medium of a book to criticize those who have failed to cooperate with him so that some of these could be accomplished

Katsainos sets himself up as a martyr to the cause of eradicating syphilis and those who do not agree with his facts he seems to hold in the light of persecutors. The literary style of the book is too florid to be called scientific and much of the description of the disease is too lurid to be recommended for the average lay person, particularly anyone afflicted with syphilis. In the reviewer's opinion anyone assuming the responsibility of writing on this particular subject for the public at large should write in a manner calculated to instill confidence. Thus something can be done for the afflicted. Why then describe the disease in such terms that the reader will be profoundly shocked psychically and in some instances perhaps develop a psychosis in the event that he is unfortunate enough to contract the disease? Even if Katsainos' contention that syphilis is incurable were true, a fact to which most syphilologists will not subscribe, it would be better for the individual physician to explain this confidentially to his patient rather than to publicize the fact in such a manner that the lay person would seize upon this particular point and overlook many of the beneficial features of modern treatment methods.

On the other hand, many of the local or general shortcomings of medicine in this country are pointed out and one wonders why they exist. The reviewer was also impressed by the writer's sincerity and his desire to publish something that would benefit man as a whole, the state and the physician. The reviewer cannot recommend it to the laity at large but feels there are many worthwhile points therein which could be read by those individuals responsible for the treatment of the disease.

A Handbook of Elementary Psychobiology and Psychiatry. By Edward G. Billings, B. S., M. D. The Macmillan Company, New York, 1939. 371 pages +xix. Price $2.00.

Prof. Adolf Meyer is one of the Titans of psychiatry but, unfortunately for the student and the physician not trained in psychobiology, his concepts occur dispersed throughout the literature and are, therefore, nowhere obtainable in any concise form. To meet the need for a short exposition of the views of the psychobiologic school Billings has published this manual. His authority is attested by prefaces written by Franklin G. Ebaugh and James J. Waring. The book is in the form of a manual which Billings has expanded from a teaching compend. As he says in the introduction, it is an orientation manual, but it is well supplemented by a bibliography at the end of each chapter and by a general bibliography of related subjects in the final section of the book.

Five parts make up this manual. The most valuable from the standpoint of the practitioner of psychiatry are—Part One: Psychobiology, and Part Four: General Principles of Psychotherapy. The section on psychobiology well outlines the concepts of this school. It is supplemented by various graphs which make the matter clearer. It is not easy reading, but the author defines each of his terms and, with a little perseverance on the part of the reader, the extremely complicated philosophical scheme falls into place. The section on General Principles of Psychotherapy is very good as an outline. It concerns itself mostly with distributive analysis. Unfortunately for the clinician, these two sections are the shortest in the manual.

The remainder of the work, which is directed primarily toward the student, consists of sections on Psychiatric Examination Procedures, General Psychopathology, and Selected References to Other Works Dealing with Personality Functioning and Psychiatry. These are well handled and are in practically outline form which should be an excellent aid to study. Included in the section on examination are techniques for the uncooperative patient and for children. Excellent examples of various questions for the direct examination are included. In the section on psychopathology the various terms for disease processes introduced by Adolf Meyer are defined and used, and outlines of the various psychiatric entities are given.

This book is admirably written. However, for the benefit of future editions this reviewer suggests that in speaking of epilepsy on page 207, "psychogenic genesis" is a tautology. Perhaps the term "psychic genesis" would avoid this while still maintaining the form in which the other items in the series are cast. On the whole the manual acceptably fills a hitherto vacant niche for the psychiatrist untrained in psychobiology, and it is invaluable for the student of psychiatry. It should see many editions. For

any comprehensive understanding of the field the bibliography must be consulted, but the author has well accomplished what he set out to do. Not the least factor in the book's favor is its modest cost.

Horns for Our Adornment. By AKSEL SANDEMOSE. Translated from the Norwegian by Eugene Gay-Tifft. Alfred A. Knopf, New York, 1938. 321 pages. Price $2.50.

Now and then a piece of pure fiction finds it way to the psychiatric editor's desk. Such works always have some justification for review in this type of journal, as indeed do all penetrating investigations of the personality. It is not, then, stretching a point, to submit this book to examination.

It is a morbid tale, and a cruel one. Comparing it with a previous work of the same author, the blurb-writer says, ". . . this novel is even more merciless in its analysis of the subconscious mind." We wonder if the word "subconscious" was really used advisedly; so often it is not. Yet, merciless indeed the reviewer found this yarn, which concerns six men on a small freight ship during a voyage from Norway to Iceland. Strange shipfellows there are, particularly the defrocked priest whose lone early peccadillo still dogged his tracks. Eventually he shipped as an ordinary seaman, first on an English collier, then on the three-masted schooner of the story. All the other characters in this drama of sadomasochism are seasoned mariners; brutal, profane and narcissistic beyond words, they continually make a game of beating and insulting the ex-clergyman, and of beating the cook.

As a handbook of sadistic practice, this novel takes high rank, although it has less finish than Joyce, less social import than Erskine Caldwell, less variety than John Dos Passos. Its broken style, almost in the stream-of-consciousness mode, both fascinates and annoys. Each chapter is furnished with a prologue and an epilogue (in italic type), comprising anecdotes, allegories, aphorisms or reflections, which, the publisher says, "have a symbolic significance." The reviewer found them to be loose fragments, some of which might well be called symbolic. The majority, however, are either merely supplemental and too obvious to be considered symbolic, or are so detached as to have the merest application to the main theme, whatever that might be. Still, they are ingenious in their form and presentation, and here and there one finds a brief comment of significance to mental hygiene.

"Horns for Our Adornment" will be read with interest by anyone having a keen appreciation of underlying motives in human nature. It is not pleasant, it is overseasoned for the sensitive, but it is a striking vignette out of life in the maritime half-world.

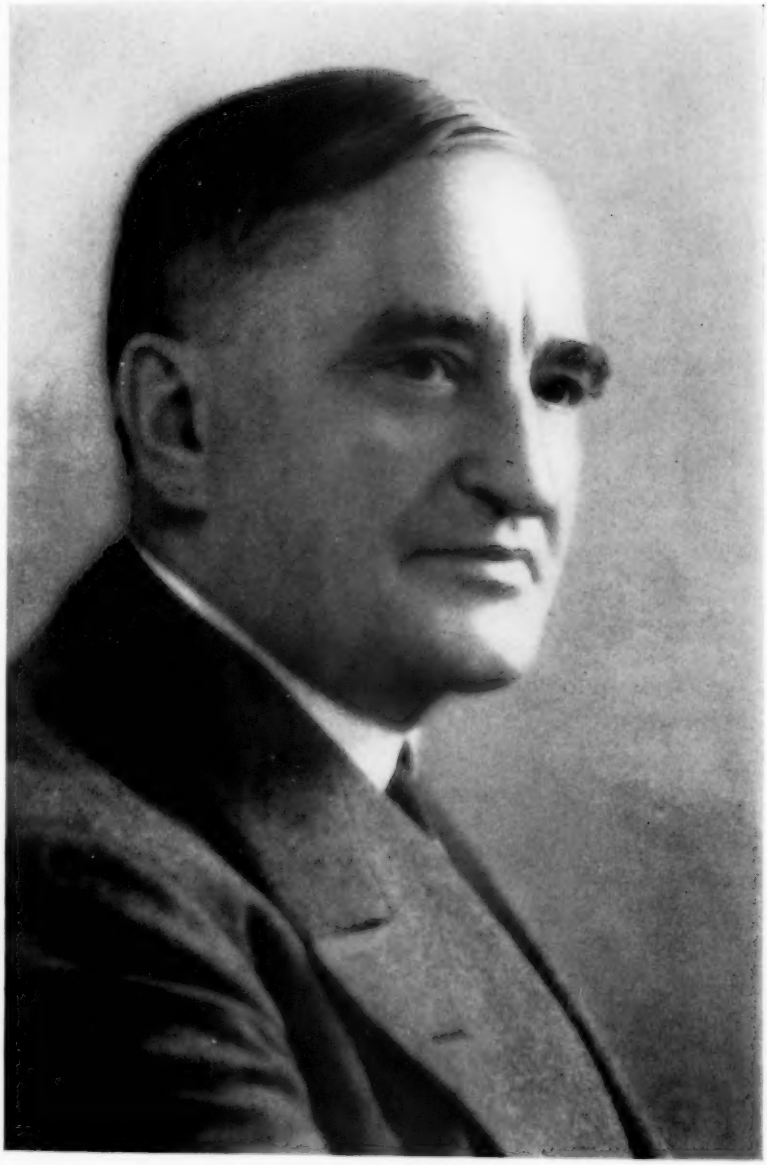
PAUL GERALD TADDIKEN

Dr. Paul Gerald Taddiken's retirement from public service, effective last October, is an event of more than passing interest. He has been identified with the St. Lawrence State Hospital as first assistant physician and as superintendent for more than twenty-eight years. He will be best remembered as its executive officer. During his administration notable developments took place in the institution, keeping it constantly abreast of advances in hospital organization and planning. Notable among these were a well-planned and commodious medical and surgical building, a staff house and staff cottages, and a new pavilion for the treatment of tuberculosis, which replaced an older one now used for other purposes. Reconstruction of the power plant and a number of other smaller projects add to the efficiency and convenience of the plant.

As chairman of the training school committee of the Department of Mental Hygiene he performed a noteworthy task in raising and unifying the standards of nurses' education and training in the schools of the department. There was never a time when the standards of the psychiatric nurse were higher than today or the prestige of the New York State hospitals schools greater among medical men. In the groups interested in nursing education he has held a prominent position and has been heard or consulted on all important measures affecting the training schools that have come up for consideration in this department or in the State Department of Education.

Dr. Taddiken performed another signal service. Over a period of years he was a member of the Governor's confidential committee to study the mental condition of felons awaiting execution in Sing Sing prison. Here was a task requiring for its just fulfillment not only a broad comprehension of the basic principles of psychiatry but a sound and discerning judgment, a mental poise and balance to be found only in the few. He was also a member of the department's important committee on statistics and forms, contributing no little to the solution of numerous questions that have come up before that group. His natural conservatism served to balance some more revolutionary opinions and to lend dignity to discussions of plans and policies.

The QUARTERLY extends its hearty congratulations to Dr. Taddiken on the success of his career and wishes him continued health and prosperity.



PAUL GERALD TADDIKEN, M. D.

NOTES

INTRODUCING A NEW JOURNAL

Subtitled "A Practical Journal on Psychiatry and Neurology," another periodical has entered the field of neuropsychiatric literature. *Diseases of the Nervous System,* under the chief editorship of Titus H. Harris, M. D., Galveston, Texas, issued its first number as of January, 1940. This journal will appear monthly and is designed for the physician in the general practice of medicine. The managing editor is Murray Kornfeld, M. D., El Paso, Texas, and the office of publication is P. O. Box 1069, El Paso. Annual subscription rate for *Diseases of the Nervous System* is $2.50. Among the associates of Dr. Harris on the editorial board will be Drs. Peter Bassoe, A. E. Bennett, F. G. Ebaugh, O. Spurgeon English, Temple S. Fay and others. The PSYCHIATRIC QUARTERLY awaits with interest the first issue of this journal.

AMERICAN ORTHOPSYCHIATRISTS WILL MEET

The seventeenth annual meeting of the American Orthopsychiatric Association, an organization for the study and treatment of behavior and its disorders, will be held at the Hotel Statler, Boston, Mass, February 22, 23 and 24, 1940. For details, readers may correspond with Dr. Norvelle C. LaMar, Secretary, 149 East 73rd Street, New York, N. Y.

SCIENTIFIC MEETING AT ST. ELIZABETHS HOSPITAL

The Medical Society of St. Elizabeths Hospital will hold its third annual scientific meeting at that hospital April 20, 1940. Several papers will be presented by members of the society. The third annual banquet is scheduled for the same evening.

MEDICAL ESSAY CONTEST ANNOUNCED

We take pleasure in announcing the Mississippi Valley Medical Society 1940 Essay Contest. The society offers annually a cash prize of $100, a gold medal and a certificate of award for the best unpublished essay on any subject of general medical interest (including medical economics), and of practical value to the general practitioner of medicine. Contestants must be members of the American Medical Association who are residents of the United States of America.

The winner will be invited to present his contribution before the next annual meeting of the Mississippi Valley Medical Society at Rock Island, Ill., September 25-27, 1940. All contributions shall not exceed 5,000 words, must be typewritten in English in manuscript form and must be received not later than May this year. Address Harold Swanberg, M. D., Secretary, Mississippi Valley Medical Society, 209-224 W. C. U. Building, Quincy, Ill.

MENTAL HYGIENE AIMS IN MASSACHUSETTS

In the annual report of the Massachusetts Society for Mental Hygiene, 1938-39, Dr. Henry B. Elkind, M. D., medical director, writes: "The fields of work of the Society have extended and its obligations have increased since the earlier and more definitive interest, to such an extent that it is difficult for a small organization like ours to render the State the services it should expect. Important fields for further development along mental hygiene lines include those of (1) social case work agencies, both public and private; (2) the nursing field, both public health and hospital nursing; (3) the public school system with its great potentialities for good; (4) industry, which will be especially demanding of our leadership now that the new war will make the labor situation more complicated: (5) the church, with its increasing recognition of the need for a better understanding of human nature; and (6) the courts and penal system, which are coming to realize more and more the value of our point of view."

The PSYCHIATRIC QUARTERLY believes it to be of value to print the above since it condenses so admirably the field of activity and possibilities for development of the mental hygiene movement. It is to be hoped that the Massachusetts Society for Mental Hygiene will be enabled to increase its staff and so enhance the proper performance of the excellent services it has rendered so efficiently to date.

THE AMERICAN PSYCHOANALYTIC ASSOCIATION

Volume II of the Bulletin of the American Psychoanalytic Association is on the editor's desk. It is a comprehensive review of the association's activities during the year 1938-1939. In view of the increasing interest in psychoanalysis the PSYCHIATRIC QUARTERLY lists herewith the officers elected to serve until May, 1940:

Honorary president, Dr. A. A. Brill; *President,* Dr. Lewis B. Hill; *Vice-President,* Dr. George E. Daniels; *Secretary,* Dr. Lawrence S. Kubie; *Treasurer,* Dr. Helen Vincent McLean.

There are constituent societies in Boston, Chicago, New York, Philadelphia, Topeka, and Washington-Baltimore. Recognized training institutes are also listed. Further information can be obtained by writing to Dr. Lawrence S. Kubie, at 7 East 81st Street, New York, N .Y.

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NOURATHAR—A NEW FINE ART

The chapel at the Delaware State Hospital which was dedicated September 28, 1939 saw the introduction of a new fine art, as a treatment adjunct in the care of the mentally ill. Its creator, Mrs. Mary Hallock Greenewalt of Wilmington has called it "Nourathar" (Arabic—essence of light). It comprises the play of lights transmitted from a color organ upon a plain ground. Mrs. Greenewalt was congratulated by the governor of Delaware. Various other states were represented, Dr. Horatio M. Pollock being present in the name of Governor Herbert H. Lehman.